AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

22 October 2023

Peter Stith, Chair, City of Portsmouth TAC
1 Junkins Avenue
Portsmouth, NH 03801

RE: Request for Site Plan Review at 686 Maplewood Avenue, Tax Map 220, Lot 90

Dear Mr. Stith and TAC Members:

On behalf of Chinburg Development, we are pleased to submit the attached plan set for **Site Plan Review** for the above-mentioned project and request that we be placed on the agenda for your **November 7, 2023,** Meeting. The project is the proposed new construction of a six (6) unit residential condominium with the associated and required site improvements.

The following plans are included in our submission:

- Cover Sheet – This shows the Development Team, Legend, Site Location, and Site Zoning.
- Existing Conditions and Topographic Plan - This plan shows the 2017 site boundary survey.
- Existing Conditions Plan C1 – This plan shows the existing site conditions.
- Site Plan C2 – This plan shows the site development with impervious surface calculations and the circulation and layout with setbacks. The project received Variances from the Board of Adjustment, which are noted on the plan.
- Landscape Plan L-1 – This plan shows the proposed landscaping.
- Floor Plans and Elevations A1 - This plan shows the Architecture of the proposed buildings.
- Grading and Erosion Control Plan C3 – This plan shows preliminary site grading and building floor elevations. The proposal is to direct runoff to a proposed R-Tank detention system.
- Utility Plan C4 – This plan shows proposed site utilities. The project will connect utilities brought to the property line in the Maplewood Avenue reconstruction project.
- Erosion Control Notes and Details D1 and D2 to D5 – These plans shows site details.

We look forward to TAC review of this submission and the Committees feedback on the proposed design.

Sincerely,

John R. Chagnon, PE

Construction Cost Estimate

Ambit Engineering

Date: October 19, 2023

Project: Chinburg Development, LLC - 696 Maplewood Avenue 5010220.2360.01

Location: 696 Maplewood Avenue, Portsmouth, NH

Scope: **Site Cost Estimate**

ITEM NO	DESCRIPTION	UNIT	AMOUNT	UNIT COST	TOTAL
1	Road Construction (Including Utilities)	LF	370	$850.00	$314,500.00
2	Granite Curbing	LF	520	$30.00	$15,600.00
3	Concrete Retaining Wall	SFF	1300	$45.00	$58,500.00
4	Fence	LF	250	$ 50.00	$12,500.00
5	Parking Striping	LS	1	$500.00	$500.00
6	Concrete Sidewalk	LF	360	$18.00	$6,480.00
7	Underground Electric / Conduit	LF	460	$45.00	$20,700.00
8	Sewer Manhole	EA	4	$4,000.00	$16,000.00
9	Sewer Service	LF	100	$60.00	$6,000.00
10	Transformer and Pad	EA	1	$5,000.00	$5,000.00
11	Water & Sprinkler Services	LF	6	$2,000.00	$12,000.00
12	R Tank System	LS	1	$32,000.00	$32,000.00
13	Drain Manhole	LS	2	$4,000.00	$8,000.00
14	Catch Basin	LS	6	$3,500.00	$21,000.00
15	Drainage Pipe	LF	475	$60.00	$28,500.00
16	Erosion Control	LS	1	$5,000.00	$5,000.00
	TOTAL				**$562,280**

Note: This is an estimate of construction costs based upon various sources

CHINBURG PROPERTIES
686 MAPLEWOOD AVENUE
OCTOBER 23, 2023

PROPOSED GREEN BUILDING COMPONENTS

LOCATION AND TRANSPORTATION

1. Public Transportation – The site is directly served by local bus service with stops along Maplewood Avenue.

2. Walkable Amenities – The site is a short walking distance to the Portsmouth downtown and numerous businesses.

3. Increased Density - The project will provide increased residential density in a previously undeveloped location.

SITE

4. Stormwater Design - The stormwater system has been designed using Low Impact Design techniques, such as R-tank stormwater detention.

5. Parking - Parking calculations have been performed using the City's parking requirements and have been exceeded.

WATER

6. Plumbing Fixtures - Dual flush or low-flow toilets and other low-flow fixtures will be provided where possible.

7. Domestic Hot Water - Will be designed to exceed code requirements.

ENERGY

8. Building Envelope - The building envelope will be designed as a high-performance assembly to exceed minimum Energy Code requirements to minimize heating and cooling expenses, while achieving a high standard of occupant comfort. Energy efficient windows will be used to meet or exceed energy code.

9. HVAC Units - High-efficiency Air Source Heat Pumps controlled by the building occupant.

10. High-Efficiency Lighting - Efficient LED lighting will be used for interior and exterior fixtures.

11. Energy Star Appliances - Appliances provided by Owner will be Energy Star rated where possible.

MATERIALS AND RESOURCES

12. Minimize Waste - Material waste will be minimized as much as possible during construction.

INDOOR ENVIRONMENTAL QUALITY

13. Low-VOC Materials - Building materials with low volatile organic compound levels will be specified where possible.

14. Indoor Air Quality - Residences will have operable windows for access to fresh air.

15. Daylight – Primary habitable spaces will have access to windows for daylight.

16. Thermal Comfort - Each residence will have dedicated HVAC controlled by the occupant.

17. Acoustic Comfort - Acoustic and vibration isolating assemblies will be provided at exterior walls due to the proximity to Interstate 95. Requirements of the Highway Noise Overlay District will be met or exceeded.

Note: Green building components reflect proposed project features and are subject to feasibility of construction.

Site Photograph #1 February 2023

Site Photograph #2 February 2023

Site Photograph #3 February 2023

Site Photograph #4 February 2023

Site Photograph #5 February 2023

Site Photograph #6 February 2023

Site Photograph #7 February 2023

Site Photograph #8 February 2023

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 220 AS LOT 90.

2) OWNERS OF RECORD:
ISLAMIC SOCIETY OF THE SEACOAST AREA
42N DOVER POINT ROAD
DOVER, NH 03820
5806/2816

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

RESIDENTIAL DEVELOPMENT CHINBURG DEVELOPMENT 686 MAPLEWOOD AVE. PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	10/23/23

REVISIONS

SCALE: 1"=60' OCTOBER 2023

PHOTO EXHIBIT

FB 394 PG 1

2360.01

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

2 October, 2023

Trip Generation
Proposed Residential Development
686 Maplewood Avenue
Portsmouth, NH

On behalf of Chinburg Development, LLC, we hereby submit this Trip Generation in support of the applicant's filing with the Portsmouth Technical Advisory Committee for Site Plan approval. The Applicant / Developer seeks to construct 6 residential dwelling units at the site, which is currently vacant, but was used as a staging area for recent construction on Maplewood Avenue. The site has been vacant for some time but previously approvals were granted to construct a Mosque, which had a proposed peak trip generation of 76 trips in the PM peak hour.

The base trip generation for the proposed 6-unit development is based on a review of the Institute of Transportation Engineers (ITE), *Trip Generation* Manual, 11th Edition. The land use code (LUC) that best resembles the proposed use is LUC 270 – Planned Unit Development. Using that description, the proposed use the site generates the following peak hour trips:

Weekday Morning Peak Hour: 4 Trips (23% entering; 77% exiting)
Weekday Evening Peak Hour: 5 Trips (64% entering; 36% exiting)

The applicant believes that the added trip generation from the site is not excessive, will not impact the adjacent street networks, and represents a significant decrease from the previous approval.

Please feel free to call if you have any questions or comments about this application.

Sincerely,

John R. Chagnon, PE
Ambit Engineering, Inc. – Haley Ward

Land Use: 270
Residential Planned Unit Development

Description

A residential planned unit development (PUD), for the purposes of trip generation, is defined as containing any combination of residential land uses. These developments might also contain supporting services such as limited retail and recreational facilities.

Additional Data

Caution—The description of a PUD is general in nature because these developments vary by density and type of dwelling. It is therefore recommended that when information on the number and type of dwellings is known, trip generation should be calculated on the basis of the known type of dwellings rather than on the basis of Land Use 270. Data for this land use are provided as general information and would be applicable only when the number of dwellings is known.

The sites were surveyed in the 1980s, and the 1990s, and the 2000s in Minnesota, South Dakota, and Virginia.

Source Numbers

111, 119, 165, 169, 357

Residential Planned Unit Development
(270)

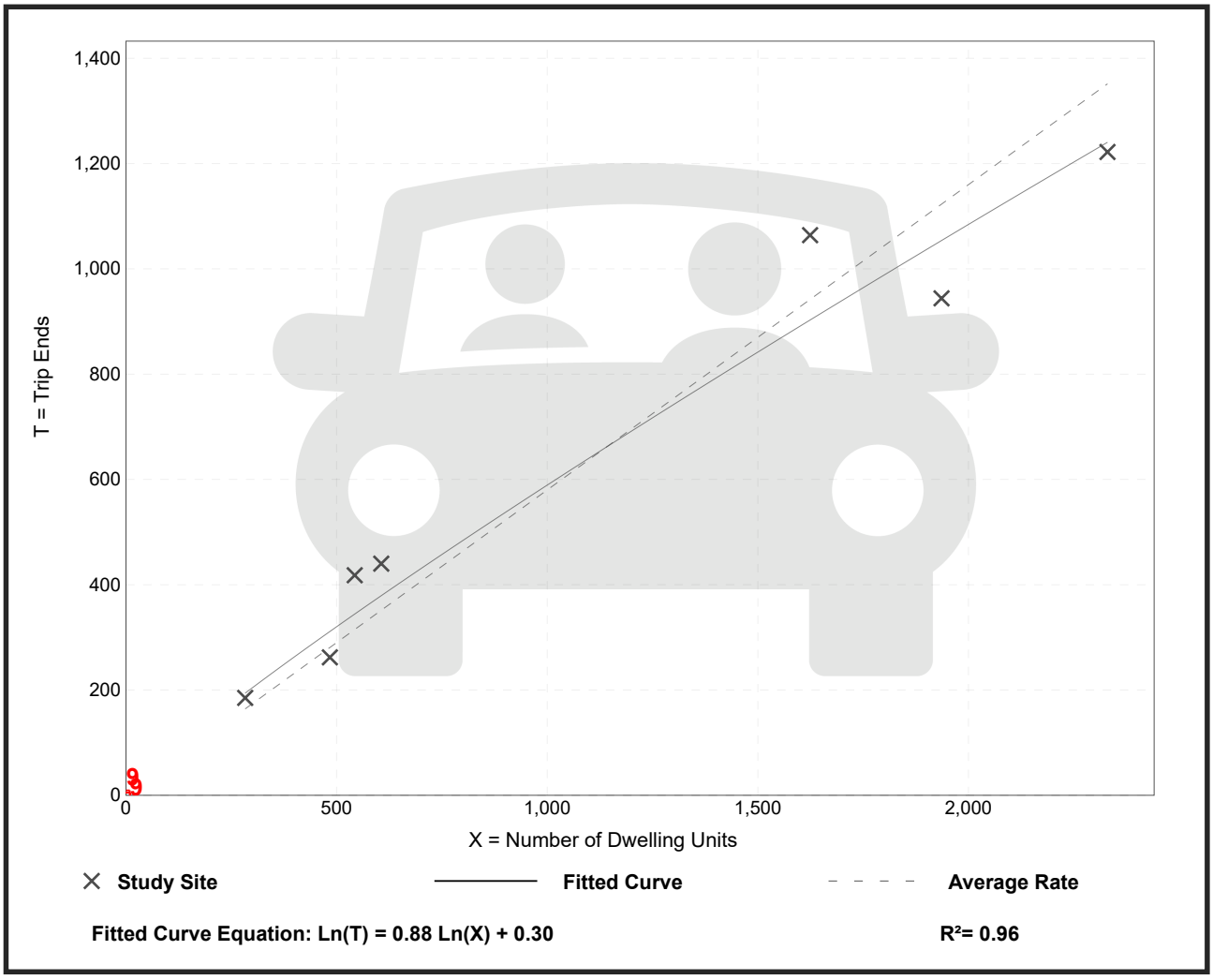
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
AM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. Num. of Dwelling Units: 1115
Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.58	0.49 - 0.77	0.10

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Residential Planned Unit Development
(270)

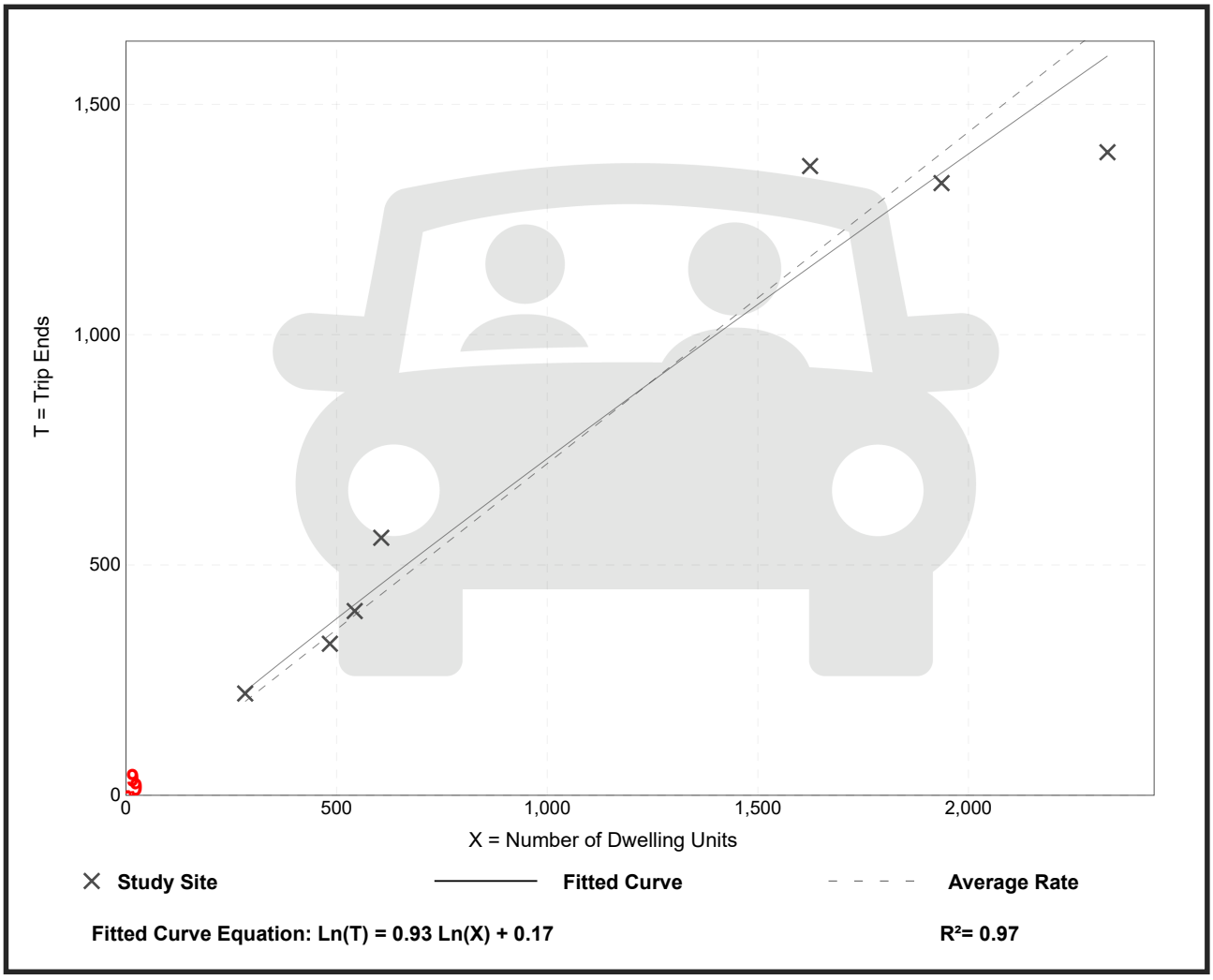
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. Num. of Dwelling Units: 1115
Directional Distribution: 64% entering, 36% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.72	0.60 - 0.92	0.11

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

DRAINAGE ANALYSIS

RESIDENTIAL DEVELOPMENT

686 MAPLEWOOD AVENUE
PORTSMOUTH, NH

PREPARED FOR
CHINBURG DEVELOPMENT, LLC

23 OCTOBER 2023

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: jchagnon@haleyward.com
(Ambit Job Number 5010220.2360.01)

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EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed residences and associated utilities and parking at 686 Maplewood Avenue in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 220 as Lot 90. The project proposes to develop six single-family residences. The total size of the lot is 62,776 square-feet (1.441 acres). The size of the total drainage area is 103,447 square-feet (2.375 acres).

The subdivision will provide for the construction of six single-family residences, with associated landscaping, utilities, and driveways. The new buildings will be serviced by public water and sewer. The development has the potential to increase stormwater runoff to adjacent properties, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no increase in peak runoff from the site as a result of this project.

The hydrologic modeling utilized for this analysis uses the "Extreme Precipitation" values for rainfall from The Northeast Regional Climate Center (Cornell University), with a 15% increase to comply with local ordinance.

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 220 as Lot 90. Bounding the site to north is a residence and Maplewood Avenue. Bounding the site to east is a business. Bounding the site to south is businesses and a residence. Bounding the site to the west is Interstate 95. The property is situated in the Single Residence B (SRB) District. A vicinity map is included in the Appendix to this report.

This report includes information about the existing site necessary to analyze stormwater runoff and to design any required mitigation. The report includes maps of pre-development and post-development watersheds, subcatchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site. Proposed stormwater management and treatment structures and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

METHODOLOGY

"Extreme Precipitation" values from The Northeast Regional Climate Center (Cornell University) have been used for modeling purposes. These values have been used in this analysis, with a 15% addition to comply with local ordinances.

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 "Hydrology" and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) "Urban Hydrology for Small Watersheds" methods. This report uses the HydroCAD version 10.20 program, written by HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for

the calculation of runoff and for pond modeling. Rainfall data and runoff curve numbers are taken from "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire."

Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 2-year, 10-year, 25-year, and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Haley Ward and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire the site is made up of one soil type:

Soil Symbol	Soil Name and Slopes
799	Urban land – Canton complex, 3 to 15 percent slopes

Urban land-Canton complex is well drained with a stated depth to restrictive feature and water table of greater than inches. While the soil report provides a Hydrologic Soil Group (HSG) of A, due to the prominent presence of ledge on the site, the site was assumed as HSG B.

The physical characteristics of the site consist of flat to moderate (3-15%) grades that generally slope downward from the south to the north of the lot. Elevations on the site range from 35 to 61 feet above sea level. The existing site is undeveloped, but was used as a construction staging facility. Vegetation around the developed portion of the lot consists of established grasses, shrubs, and trees. There is an existing gravel driveway/parking area.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0259F (effective date January 29, 2021), the project site is

located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

PRE-DEVELOPMENT DRAINAGE

In the pre-development condition, the site has been analyzed as three watershed basins (ES1, ES2 and ES3) based on localized topography and discharge location. Subcatchment ES1 contains the west half of the lot and drains north to the City drainage network on Maplewood Avenue (Drainage Point 1 or DP1). Subcatchment ES2 contains the east half of the lot and drains to the northeast to DP1. Subcatchment ES3 contains the southern edge of the lot and drains to the southeast to Drainage Point 2 (DP2).

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	To Design Point
ES1	65,154	6.6	66	5.48	11.26	DP1
ES2	28,750	5.0	73	3.27	6.12	DP1
ES3	9,546	5.0	62	0.71	1.56	DP2

POST-DEVELOPMENT DRAINAGE

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has been analyzed as four subcatchment basins, (PS1, PS2, PS2a, and PS3). Subcatchments PS1, PS2, and PS3 approximate the locations of ES1, ES2, and ES3 respectively and drain to the same discharge points. Subcatchment PS2a is located in the center of the property and is detained and treated through an infiltrative R-Tank system before being discharged to DP1.

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
PS1	57,906	6.3	68	5.31	10.59	DP1
PS2	13,835	5.0	70	1.42	2.77	DP1
PS2a	22,677	5.0	87	3.66	5.95	DP1
PS3	9,029	5.0	61	0.64	1.43	DP2

The overall impervious coverage of the subcatchment areas analyzed in this report **increases** from 24,089 s.f. (23.3%) in the pre-development condition to 33,105 s.f. (32.0%) in the post-development condition. The project proposes the construction of an R-Tank detention system with infiltrative capacity on site, providing treatment and reducing the peak flow discharge from the site.

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for each design point. The comparison shows the reduced flows as a result of the R-Tank system.

Table 3: Pre-Development to Post-Development Comparison

	Q2 (CFS)		Q10 (CFS)		Q50 (CFS)		
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Description**
DP1	3.67	3.57	8.55	8.38	17.05	17.02	Maplewood Ave.
DP2	0.25	0.22	0.71	0.64	1.56	1.43	South of Lot

Note that all post-development peak discharges are either equivalent or less than the existing peak discharges.

OFFSITE INFRASTRUCTURE CAPACITY

Drainage Point 1 is the City drainage network on Maplewood Avenue. A subsurface R-Tank structure with infiltrative capacity will be implemented to mitigate any increases in peak flow from the site, therefore no impact to city infrastructure is anticipated.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is moderate due to the presence of soils that are highly erodible. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire." Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and surfacing the access drives and parking areas with asphalt paving and other areas with impervious walkways.

CONCLUSION

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the R-Tank units, the post-development runoff rates are reduced to below the pre-development runoff rates. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project.

REFERENCES

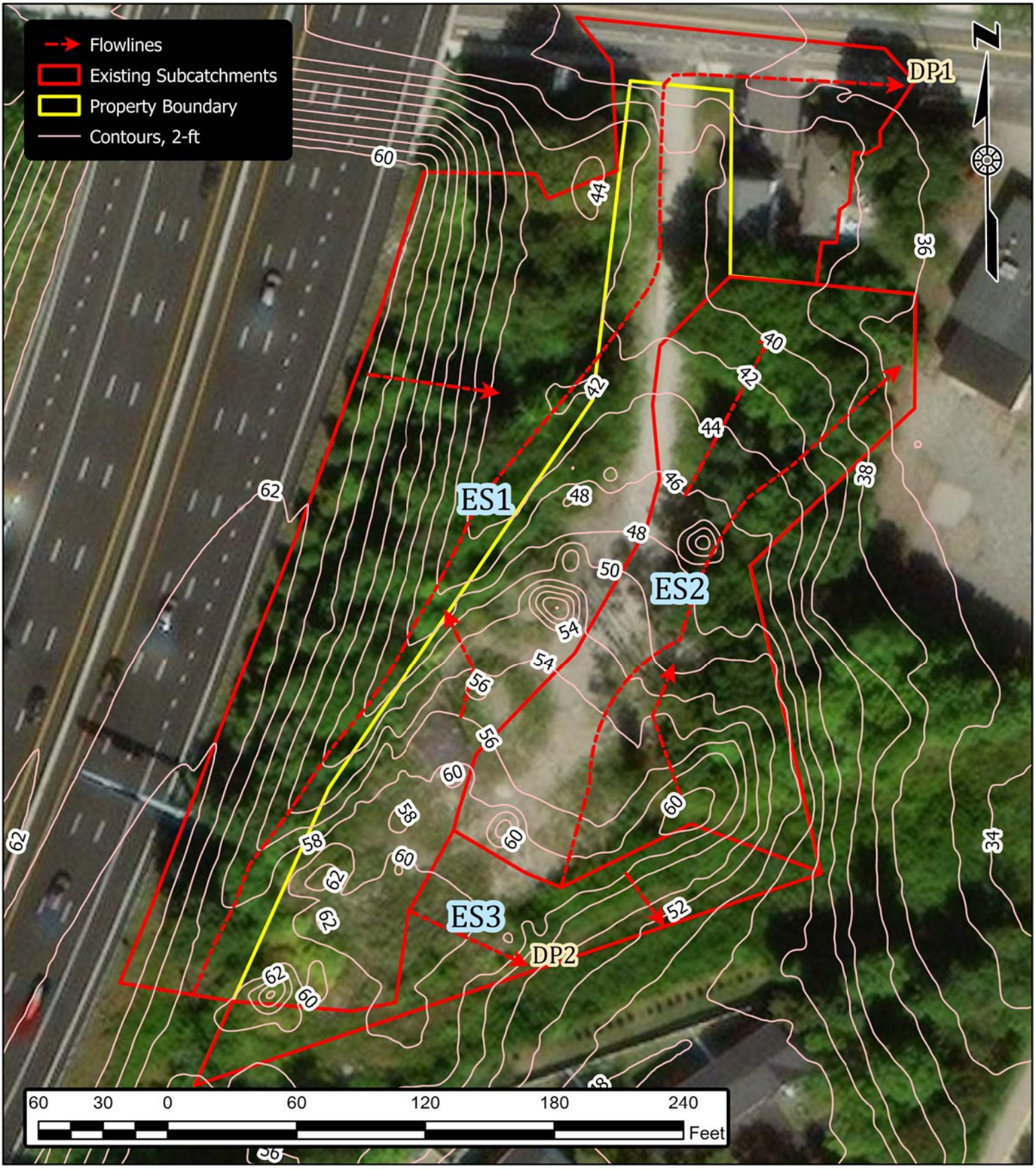
1. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).
2. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.20* copyright 2013.

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

Existing Subcatchments

SITE REDEVELOPMENT
686 MAPLEWOOD AVENUE
PORTSMOUTH, NH

JOB NUMBER: 2360
SCALE: 1" = 60'
SUBMITTED: 10-17-2023

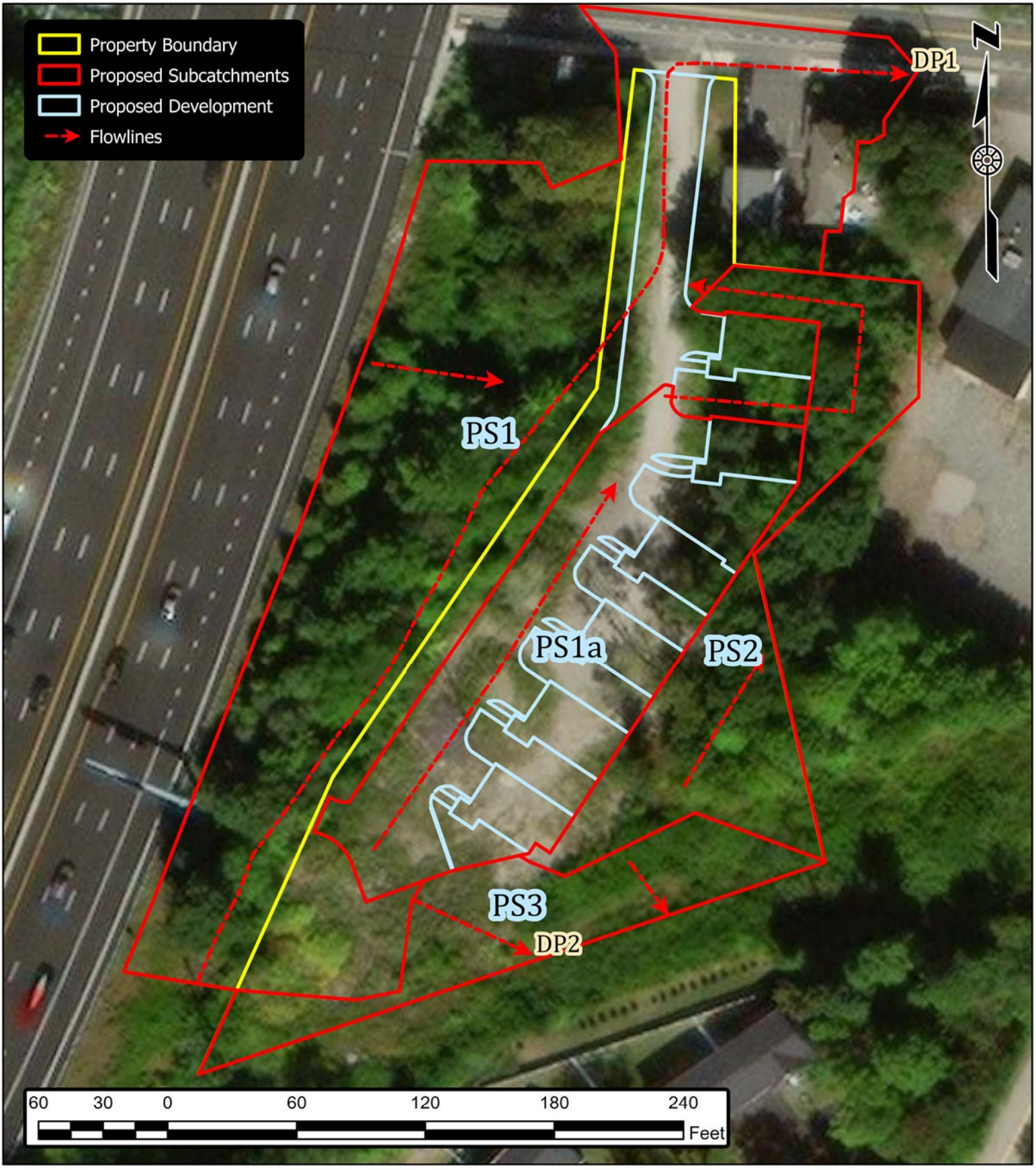


AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

Proposed Subcatchments

SITE REDEVELOPMENT
686 MAPLEWOOD AVENUE
PORTSMOUTH, NH

JOB NUMBER: 2360
SCALE: 1" = 60'
SUBMITTED: 10-23-2023



APPENDIX A

VICINITY (TAX) MAP,

AERIAL ORTHOGRAPHY,

USGS MAP

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

Aerial Orthography

SITE REDEVELOPMENT
686 MAPLEWOOD AVENUE
PORTSMOUTH, NH

JOB NUMBER: 2360
SCALE: 1" = 60'
SUBMITTED: 02-14-2023

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

Tax Map

SITE REDEVELOPMENT
686 MAPLEWOOD AVENUE
PORTSMOUTH, NH

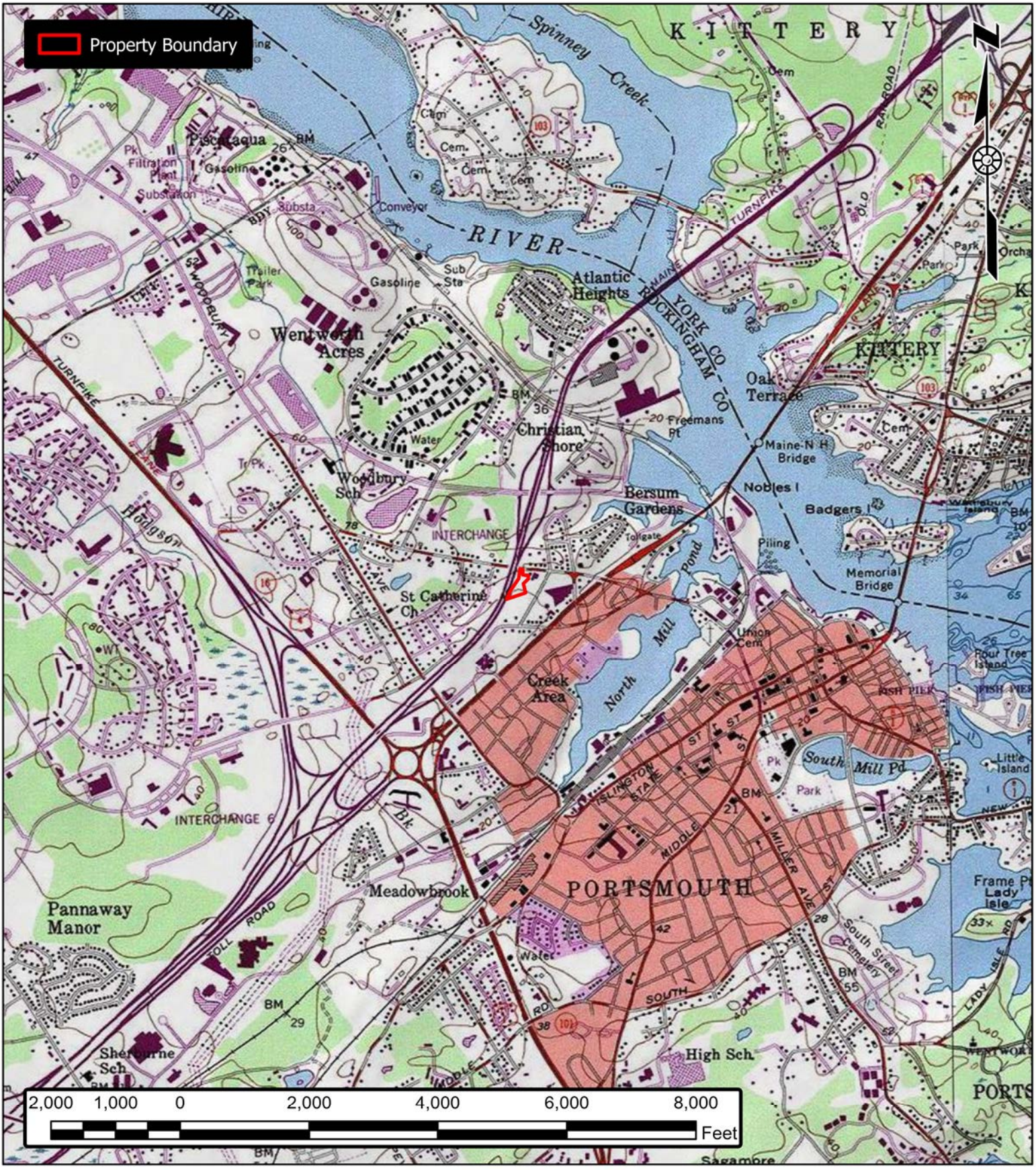
JOB NUMBER: 2360
SCALE: 1" = 100'
SUBMITTED: 02-14-2023

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

USGS Map

SITE REDEVELOPMENT
686 MAPLEWOOD AVENUE
PORTSMOUTH, NH

JOB NUMBER: 2360
SCALE: 1" = 2,000'
SUBMITTED: 02-21-2023



APPENDIX B

TABLES, CHARTS, ETC.

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point	
Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	43.080 degrees North
Longitude	70.774 degrees West
Elevation	10 feet
Date/Time	Thu Feb 16 2023 11:52:25 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.92	**1yr**	2.35	2.80	3.21	3.94	4.54	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.20	3.56	**2yr**	2.84	3.43	3.93	4.67	5.32	**2yr**
5yr	0.37	0.58	0.73	0.97	1.25	1.60	**5yr**	1.08	1.46	1.88	2.43	3.13	4.06	4.57	**5yr**	3.59	4.39	5.03	5.92	6.69	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.72	2.23	2.89	3.74	4.86	5.52	**10yr**	4.30	5.31	6.07	7.09	7.96	**10yr**
25yr	0.48	0.76	0.96	1.33	1.77	2.33	**25yr**	1.53	2.14	2.77	3.62	4.73	6.16	7.09	**25yr**	5.45	6.81	7.78	9.00	10.03	**25yr**
50yr	0.53	0.86	1.10	1.53	2.06	2.75	**50yr**	1.78	2.52	3.28	4.31	5.65	7.38	8.57	**50yr**	6.53	8.24	9.40	10.79	11.95	**50yr**
100yr	0.59	0.96	1.24	1.76	2.41	3.24	**100yr**	2.08	2.97	3.89	5.14	6.75	8.83	10.36	**100yr**	7.82	9.96	11.35	12.93	14.25	**100yr**
200yr	0.67	1.09	1.42	2.03	2.81	3.82	**200yr**	2.43	3.50	4.60	6.11	8.06	10.59	12.52	**200yr**	9.37	12.04	13.71	15.50	16.99	**200yr**
500yr	0.79	1.31	1.70	2.47	3.46	4.74	**500yr**	2.98	4.36	5.74	7.68	10.19	13.45	16.11	**500yr**	11.90	15.49	17.60	19.72	21.45	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	**1yr**	0.63	0.86	0.92	1.32	1.68	2.22	2.49	**1yr**	1.97	2.39	2.86	3.17	3.87	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.05	3.45	**2yr**	2.70	3.32	3.82	4.54	5.07	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.18	**5yr**	3.35	4.02	4.71	5.52	6.23	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.81	2.39	3.06	4.36	4.85	**10yr**	3.86	4.67	5.43	6.40	7.18	**10yr**
25yr	0.44	0.67	0.83	1.18	1.56	1.90	**25yr**	1.35	1.86	2.10	2.76	3.54	4.69	5.88	**25yr**	4.15	5.65	6.63	7.77	8.66	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.17	**50yr**	1.52	2.12	2.35	3.08	3.94	5.30	6.79	**50yr**	4.69	6.53	7.70	9.02	9.99	**50yr**
100yr	0.53	0.81	1.01	1.46	2.01	2.47	**100yr**	1.73	2.41	2.63	3.42	4.36	5.94	7.83	**100yr**	5.26	7.53	8.94	10.47	11.53	**100yr**
200yr	0.59	0.89	1.13	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.80	4.81	6.65	9.04	**200yr**	5.89	8.69	10.38	12.18	13.33	**200yr**
500yr	0.68	1.02	1.31	1.90	2.71	3.36	**500yr**	2.33	3.29	3.41	4.34	5.48	7.73	10.91	**500yr**	6.84	10.50	12.64	14.89	16.13	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.21	2.98	3.15	**1yr**	2.64	3.03	3.58	4.37	5.04	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.51	3.42	3.70	**2yr**	3.03	3.55	4.08	4.83	5.63	**2yr**
5yr	0.40	0.62	0.76	1.05	1.33	1.62	**5yr**	1.15	1.58	1.88	2.53	3.25	4.33	4.95	**5yr**	3.83	4.76	5.37	6.36	7.14	**5yr**
10yr	0.47	0.72	0.89	1.24	1.61	1.97	**10yr**	1.39	1.93	2.28	3.10	3.95	5.33	6.19	**10yr**	4.72	5.95	6.80	7.82	8.73	**10yr**
25yr	0.57	0.87	1.09	1.55	2.04	2.56	**25yr**	1.76	2.50	2.95	4.06	5.14	7.79	8.32	**25yr**	6.90	8.00	9.12	10.32	11.39	**25yr**
50yr	0.67	1.02	1.27	1.82	2.45	3.12	**50yr**	2.11	3.05	3.59	4.99	6.30	9.76	10.43	**50yr**	8.64	10.03	11.41	12.70	13.94	**50yr**
100yr	0.79	1.19	1.49	2.15	2.95	3.79	**100yr**	2.54	3.71	4.36	6.14	7.73	12.22	13.08	**100yr**	10.81	12.57	14.26	15.66	17.06	**100yr**
200yr	0.92	1.38	1.75	2.53	3.53	4.63	**200yr**	3.05	4.52	5.32	7.56	9.49	15.34	16.41	**200yr**	13.57	15.78	17.86	19.30	20.88	**200yr**
500yr	1.14	1.69	2.18	3.17	4.50	6.00	**500yr**	3.89	5.87	6.91	9.99	12.48	20.74	22.15	**500yr**	18.35	21.30	24.04	25.45	27.30	**500yr**

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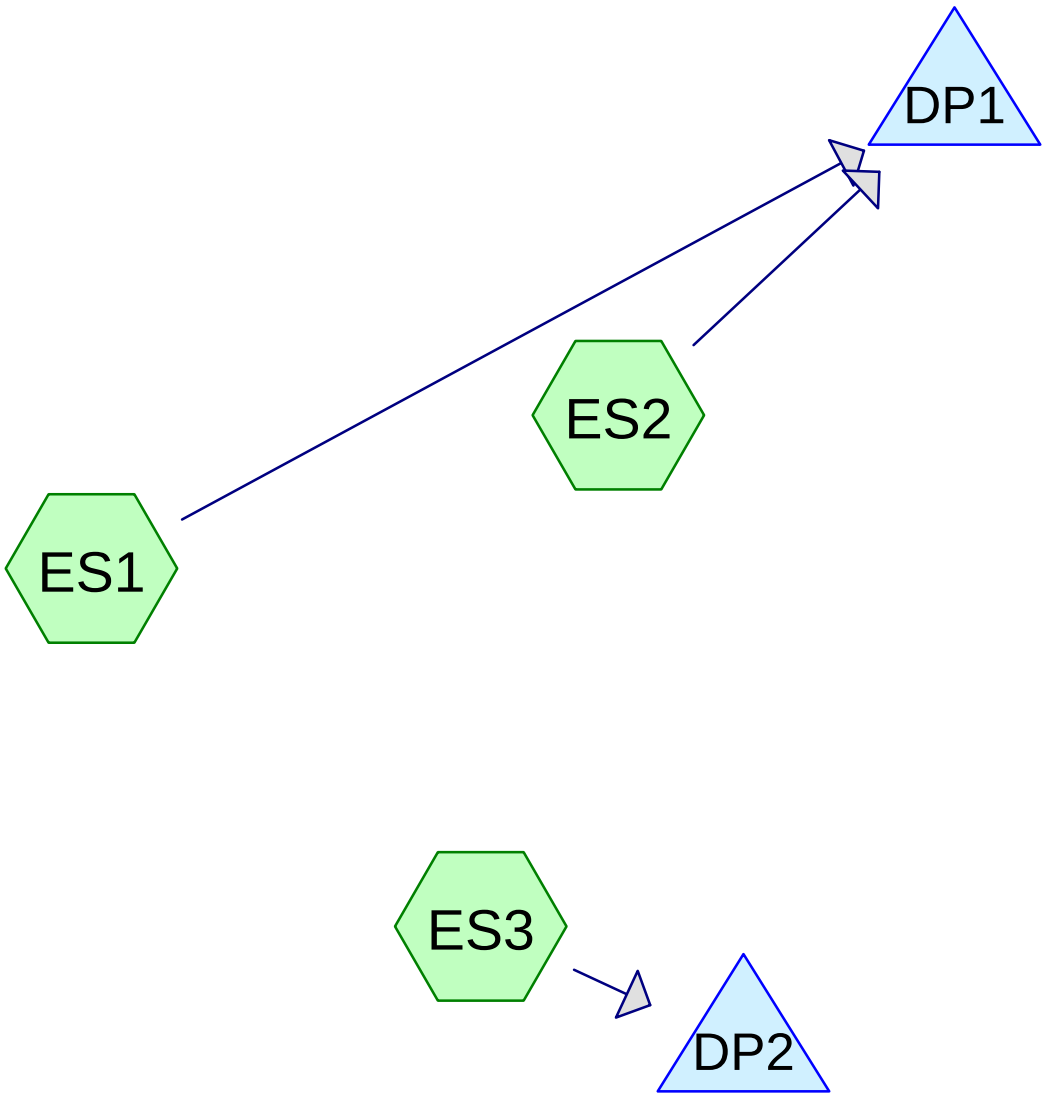
APPENDIX C

HYDROCAD DRAINAGE

ANALYSIS CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for 2023-03-17 Existing Subcatchments David T
Prepared by Haley Ward, Printed 10/19/2023

Project Notes

Defined 5 rainfall events from extreme_precip IDF
Defined 5 rainfall events from extreme_precip_tables_output IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.68	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.59	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.08	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.49	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.157	61	>75% Grass cover, Good, HSG B (ES1, ES2, ES3)
0.298	96	Gravel surface, HSG B (ES1, ES2, ES3)
0.214	98	Paved parking, HSG B (ES1, ES2, ES3)
0.041	98	Roofs, HSG B (ES1)
0.665	55	Woods, Good, HSG B (ES1, ES2)
2.375	**68**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
2.375	HSG B	ES1, ES2, ES3
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.375		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.157	0.000	0.000	0.000	1.157	>75% Grass cover, Good	ES1, ES2, ES3
0.000	0.298	0.000	0.000	0.000	0.298	Gravel surface	ES1, ES2, ES3
0.000	0.214	0.000	0.000	0.000	0.214	Paved parking	ES1, ES2, ES3
0.000	0.041	0.000	0.000	0.000	0.041	Roofs	ES1
0.000	0.665	0.000	0.000	0.000	0.665	Woods, Good	ES1, ES2
0.000	**2.375**	**0.000**	**0.000**	**0.000**	**2.375**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Runoff Area=65,154 sf 11.95% Impervious Runoff Depth>0.80"
Flow Length=486' Slope=0.1604 '/' Tc=6.6 min CN=66 Runoff=2.20 cfs 0.100 af

Subcatchment ES2: Runoff Area=28,750 sf 11.44% Impervious Runoff Depth>1.18"
Flow Length=283' Slope=0.1041 '/' Tc=5.0 min CN=73 Runoff=1.54 cfs 0.065 af

Subcatchment ES3: Runoff Area=9,546 sf 0.04% Impervious Runoff Depth>0.62"
Flow Length=28' Slope=0.1868 '/' Tc=5.0 min CN=62 Runoff=0.25 cfs 0.011 af

Pond DP1: Inflow=3.67 cfs 0.165 af
Primary=3.67 cfs 0.165 af

Pond DP2: Inflow=0.25 cfs 0.011 af
Primary=0.25 cfs 0.011 af

Total Runoff Area = 2.375 ac Runoff Volume = 0.176 af Average Runoff Depth = 0.89"
89.29% Pervious = 2.121 ac 10.71% Impervious = 0.254 ac

Summary for Subcatchment ES1:

Runoff = 2.20 cfs @ 11.99 hrs, Volume= 0.100 af, Depth> 0.80"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
1,767	98	Roofs, HSG B
32,907	61	>75% Grass cover, Good, HSG B
19,850	55	Woods, Good, HSG B
6,020	98	Paved parking, HSG B
4,610	96	Gravel surface, HSG B
65,154	66	Weighted Average
57,367		88.05% Pervious Area
7,787		11.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	486	0.1604	1.23		**Lag/CN Method,**

Summary for Subcatchment ES2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.54 cfs @ 11.96 hrs, Volume= 0.065 af, Depth> 1.18"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
3,290	98	Paved parking, HSG B
8,147	61	>75% Grass cover, Good, HSG B
9,126	55	Woods, Good, HSG B
8,187	96	Gravel surface, HSG B
28,750	73	Weighted Average
25,460		88.56% Pervious Area
3,290		11.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	283	0.1041	1.07		**Lag/CN Method,**
4.4	283	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment ES3:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.25 cfs @ 11.98 hrs, Volume= 0.011 af, Depth> 0.62"
Routed to Pond DP2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
4	98	Paved parking, HSG B
9,359	61	>75% Grass cover, Good, HSG B
183	96	Gravel surface, HSG B
9,546	62	Weighted Average
9,542		99.96% Pervious Area
4		0.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	28	0.1868	0.67		**Lag/CN Method,**
0.7	28	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.156 ac, 11.80% Impervious, Inflow Depth > 0.92" for 2-yr event
Inflow = 3.67 cfs @ 11.98 hrs, Volume= 0.165 af
Primary = 3.67 cfs @ 11.98 hrs, Volume= 0.165 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.219 ac, 0.04% Impervious, Inflow Depth > 0.62" for 2-yr event
Inflow = 0.25 cfs @ 11.98 hrs, Volume= 0.011 af
Primary = 0.25 cfs @ 11.98 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Runoff Area=65,154 sf 11.95% Impervious Runoff Depth>1.95"
Flow Length=486' Slope=0.1604 '/' Tc=6.6 min CN=66 Runoff=5.48 cfs 0.243 af

Subcatchment ES2: Runoff Area=28,750 sf 11.44% Impervious Runoff Depth>2.53"
Flow Length=283' Slope=0.1041 '/' Tc=5.0 min CN=73 Runoff=3.27 cfs 0.139 af

Subcatchment ES3: Runoff Area=9,546 sf 0.04% Impervious Runoff Depth>1.64"
Flow Length=28' Slope=0.1868 '/' Tc=5.0 min CN=62 Runoff=0.71 cfs 0.030 af

Pond DP1: Inflow=8.55 cfs 0.382 af
Primary=8.55 cfs 0.382 af

Pond DP2: Inflow=0.71 cfs 0.030 af
Primary=0.71 cfs 0.030 af

Total Runoff Area = 2.375 ac Runoff Volume = 0.412 af Average Runoff Depth = 2.08"
89.29% Pervious = 2.121 ac 10.71% Impervious = 0.254 ac

Summary for Subcatchment ES1:

Runoff = 5.48 cfs @ 11.98 hrs, Volume= 0.243 af, Depth> 1.95"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
1,767	98	Roofs, HSG B
32,907	61	>75% Grass cover, Good, HSG B
19,850	55	Woods, Good, HSG B
6,020	98	Paved parking, HSG B
4,610	96	Gravel surface, HSG B
65,154	66	Weighted Average
57,367		88.05% Pervious Area
7,787		11.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	486	0.1604	1.23		**Lag/CN Method,**

Summary for Subcatchment ES2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.27 cfs @ 11.96 hrs, Volume= 0.139 af, Depth> 2.53"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
3,290	98	Paved parking, HSG B
8,147	61	>75% Grass cover, Good, HSG B
9,126	55	Woods, Good, HSG B
8,187	96	Gravel surface, HSG B
28,750	73	Weighted Average
25,460		88.56% Pervious Area
3,290		11.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	283	0.1041	1.07		**Lag/CN Method,**
4.4	283	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment ES3:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.71 cfs @ 11.96 hrs, Volume= 0.030 af, Depth> 1.64"
Routed to Pond DP2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
4	98	Paved parking, HSG B
9,359	61	>75% Grass cover, Good, HSG B
183	96	Gravel surface, HSG B
9,546	62	Weighted Average
9,542		99.96% Pervious Area
4		0.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	28	0.1868	0.67		**Lag/CN Method,**
0.7	28	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.156 ac, 11.80% Impervious, Inflow Depth > 2.13" for 10-yr event
Inflow = 8.55 cfs @ 11.97 hrs, Volume= 0.382 af
Primary = 8.55 cfs @ 11.97 hrs, Volume= 0.382 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.219 ac, 0.04% Impervious, Inflow Depth > 1.64" for 10-yr event
Inflow = 0.71 cfs @ 11.96 hrs, Volume= 0.030 af
Primary = 0.71 cfs @ 11.96 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Runoff Area=65,154 sf 11.95% Impervious Runoff Depth>3.00"
Flow Length=486' Slope=0.1604 '/' Tc=6.6 min CN=66 Runoff=8.38 cfs 0.373 af

Subcatchment ES2: Runoff Area=28,750 sf 11.44% Impervious Runoff Depth>3.71"
Flow Length=283' Slope=0.1041 '/' Tc=5.0 min CN=73 Runoff=4.72 cfs 0.204 af

Subcatchment ES3: Runoff Area=9,546 sf 0.04% Impervious Runoff Depth>2.61"
Flow Length=28' Slope=0.1868 '/' Tc=5.0 min CN=62 Runoff=1.13 cfs 0.048 af

Pond DP1: Inflow=12.82 cfs 0.577 af
Primary=12.82 cfs 0.577 af

Pond DP2: Inflow=1.13 cfs 0.048 af
Primary=1.13 cfs 0.048 af

Total Runoff Area = 2.375 ac Runoff Volume = 0.625 af Average Runoff Depth = 3.16"
89.29% Pervious = 2.121 ac 10.71% Impervious = 0.254 ac

Summary for Subcatchment ES1:

Runoff = 8.38 cfs @ 11.98 hrs, Volume= 0.373 af, Depth> 3.00"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
1,767	98	Roofs, HSG B
32,907	61	>75% Grass cover, Good, HSG B
19,850	55	Woods, Good, HSG B
6,020	98	Paved parking, HSG B
4,610	96	Gravel surface, HSG B
65,154	66	Weighted Average
57,367		88.05% Pervious Area
7,787		11.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	486	0.1604	1.23		**Lag/CN Method,**

Summary for Subcatchment ES2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.72 cfs @ 11.96 hrs, Volume= 0.204 af, Depth> 3.71"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
3,290	98	Paved parking, HSG B
8,147	61	>75% Grass cover, Good, HSG B
9,126	55	Woods, Good, HSG B
8,187	96	Gravel surface, HSG B
28,750	73	Weighted Average
25,460		88.56% Pervious Area
3,290		11.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	283	0.1041	1.07		**Lag/CN Method,**
4.4	283	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment ES3:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.13 cfs @ 11.96 hrs, Volume= 0.048 af, Depth> 2.61"
Routed to Pond DP2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
4	98	Paved parking, HSG B
9,359	61	>75% Grass cover, Good, HSG B
183	96	Gravel surface, HSG B
9,546	62	Weighted Average
9,542		99.96% Pervious Area
4		0.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	28	0.1868	0.67		**Lag/CN Method,**
0.7	28	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.156 ac, 11.80% Impervious, Inflow Depth > 3.21" for 25-yr event
Inflow = 12.82 cfs @ 11.97 hrs, Volume= 0.577 af
Primary = 12.82 cfs @ 11.97 hrs, Volume= 0.577 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.219 ac, 0.04% Impervious, Inflow Depth > 2.61" for 25-yr event
Inflow = 1.13 cfs @ 11.96 hrs, Volume= 0.048 af
Primary = 1.13 cfs @ 11.96 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES1: Runoff Area=65,154 sf 11.95% Impervious Runoff Depth>4.07"
Flow Length=486' Slope=0.1604 '/' Tc=6.6 min CN=66 Runoff=11.26 cfs 0.507 af

Subcatchment ES2: Runoff Area=28,750 sf 11.44% Impervious Runoff Depth>4.88"
Flow Length=283' Slope=0.1041 '/' Tc=5.0 min CN=73 Runoff=6.12 cfs 0.268 af

Subcatchment ES3: Runoff Area=9,546 sf 0.04% Impervious Runoff Depth>3.62"
Flow Length=28' Slope=0.1868 '/' Tc=5.0 min CN=62 Runoff=1.56 cfs 0.066 af

Pond DP1: Inflow=17.05 cfs 0.775 af
Primary=17.05 cfs 0.775 af

Pond DP2: Inflow=1.56 cfs 0.066 af
Primary=1.56 cfs 0.066 af

Total Runoff Area = 2.375 ac Runoff Volume = 0.841 af Average Runoff Depth = 4.25"
89.29% Pervious = 2.121 ac 10.71% Impervious = 0.254 ac

Summary for Subcatchment ES1:

Runoff = 11.26 cfs @ 11.98 hrs, Volume= 0.507 af, Depth> 4.07"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.49"

Area (sf)	CN	Description
1,767	98	Roofs, HSG B
32,907	61	>75% Grass cover, Good, HSG B
19,850	55	Woods, Good, HSG B
6,020	98	Paved parking, HSG B
4,610	96	Gravel surface, HSG B
65,154	66	Weighted Average
57,367		88.05% Pervious Area
7,787		11.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	486	0.1604	1.23		**Lag/CN Method,**

Summary for Subcatchment ES2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.12 cfs @ 11.96 hrs, Volume= 0.268 af, Depth> 4.88"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.49"

Area (sf)	CN	Description
3,290	98	Paved parking, HSG B
8,147	61	>75% Grass cover, Good, HSG B
9,126	55	Woods, Good, HSG B
8,187	96	Gravel surface, HSG B
28,750	73	Weighted Average
25,460		88.56% Pervious Area
3,290		11.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	283	0.1041	1.07		**Lag/CN Method,**
4.4	283	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment ES3:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.56 cfs @ 11.96 hrs, Volume= 0.066 af, Depth> 3.62"
Routed to Pond DP2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.49"

Area (sf)	CN	Description
4	98	Paved parking, HSG B
9,359	61	>75% Grass cover, Good, HSG B
183	96	Gravel surface, HSG B
9,546	62	Weighted Average
9,542		99.96% Pervious Area
4		0.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	28	0.1868	0.67		**Lag/CN Method,**
0.7	28	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.156 ac, 11.80% Impervious, Inflow Depth > 4.32" for 50-yr event
Inflow = 17.05 cfs @ 11.97 hrs, Volume= 0.775 af
Primary = 17.05 cfs @ 11.97 hrs, Volume= 0.775 af, Atten= 0%, Lag= 0.0 min

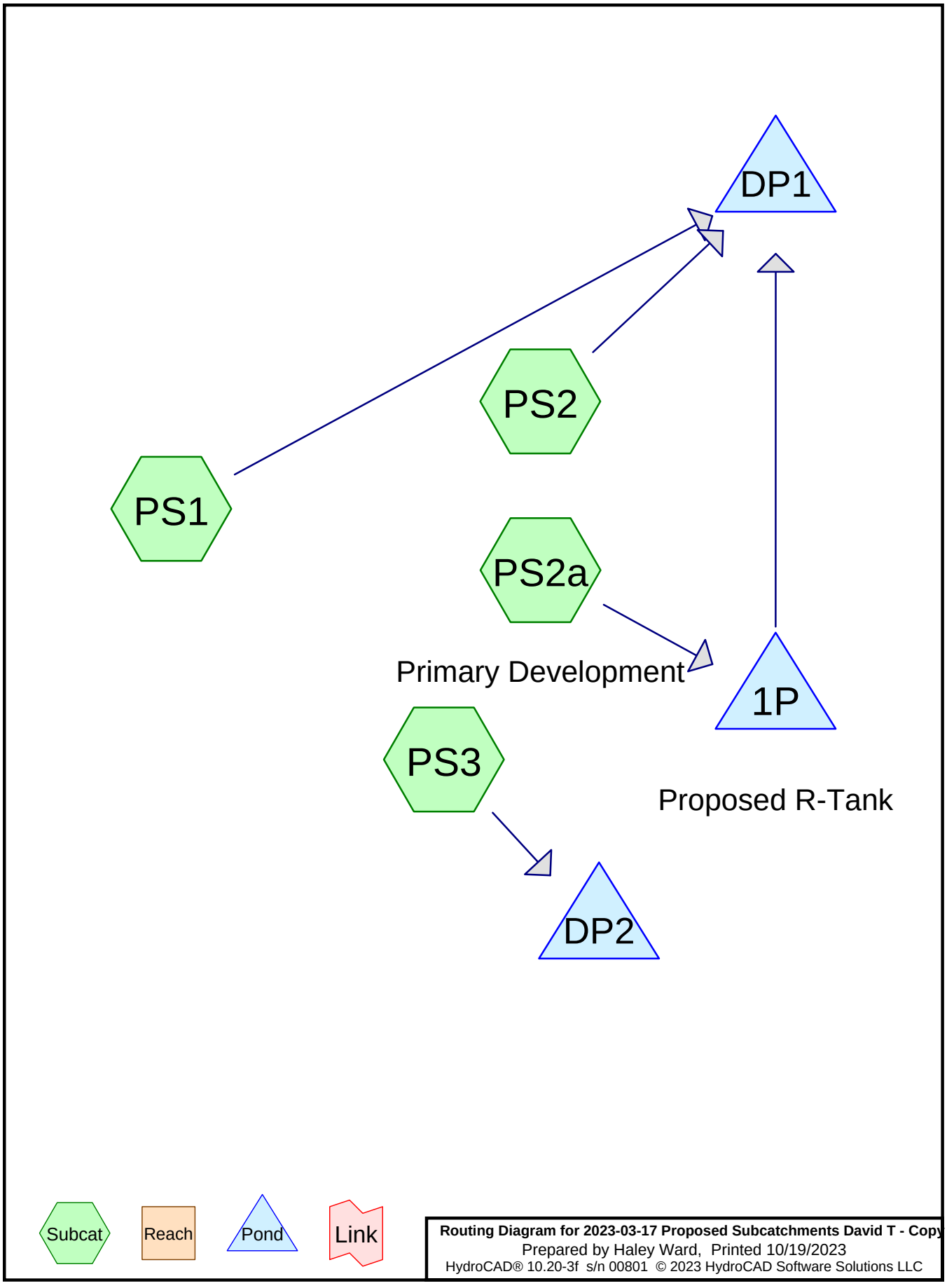
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.219 ac, 0.04% Impervious, Inflow Depth > 3.62" for 50-yr event
Inflow = 1.56 cfs @ 11.96 hrs, Volume= 0.066 af
Primary = 1.56 cfs @ 11.96 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Routing Diagram for 2023-03-17 Proposed Subcatchments David T - Copy
Prepared by Haley Ward, Printed 10/19/2023

Project Notes

Defined 5 rainfall events from extreme_precip IDF
Defined 5 rainfall events from extreme_precip_tables_output IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.68	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.59	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.08	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.49	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.163	61	>75% Grass cover, Good, HSG B (PS1, PS2, PS2a, PS3)
0.551	98	Paved parking, HSG B (PS1, PS2, PS2a)
0.208	98	Roofs, HSG B (PS1, PS2a)
0.000	98	Unconnected pavement, HSG B (PS3)
0.453	55	Woods, Good, HSG B (PS1)
2.375	**72**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
2.375	HSG B	PS1, PS2, PS2a, PS3
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.375		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.163	0.000	0.000	0.000	1.163	>75% Grass cover, Good	PS1, PS2, PS2a, PS3
0.000	0.551	0.000	0.000	0.000	0.551	Paved parking	PS1, PS2, PS2a
0.000	0.208	0.000	0.000	0.000	0.208	Roofs	PS1, PS2a
0.000	0.000	0.000	0.000	0.000	0.000	Unconnected pavement	PS3
0.000	0.453	0.000	0.000	0.000	0.453	Woods, Good	PS1
0.000	**2.375**	**0.000**	**0.000**	**0.000**	**2.375**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1P	37.45	37.28	68.4	0.0025	0.013	0.0	15.0	0.0	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PS1: Runoff Area=57,906 sf 23.43% Impervious Runoff Depth>0.90"
Flow Length=486' Slope=0.1604 '/' Tc=6.3 min CN=68 Runoff=2.25 cfs 0.100 af

Subcatchment PS2: Runoff Area=13,835 sf 23.79% Impervious Runoff Depth>1.01"
Flow Length=283' Slope=0.1041 '/' Tc=5.0 min CN=70 Runoff=0.63 cfs 0.027 af

Subcatchment PS2a: Primary Development Runoff Area=22,677 sf 71.57% Impervious Runoff Depth>2.18"
Tc=5.0 min CN=87 Runoff=2.15 cfs 0.095 af

Subcatchment PS3: Runoff Area=9,029 sf 0.04% Impervious Runoff Depth>0.57"
Flow Length=28' Slope=0.1868 '/' Tc=5.0 min CN=61 Runoff=0.22 cfs 0.010 af

Pond 1P: Proposed R-Tank Peak Elev=38.37' Storage=0.027 af Inflow=2.15 cfs 0.095 af
Discarded=0.16 cfs 0.060 af Primary=0.86 cfs 0.034 af Outflow=1.02 cfs 0.095 af

Pond DP1: Inflow=3.57 cfs 0.161 af
Primary=3.57 cfs 0.161 af

Pond DP2: Inflow=0.22 cfs 0.010 af
Primary=0.22 cfs 0.010 af

Total Runoff Area = 2.375 ac Runoff Volume = 0.231 af Average Runoff Depth = 1.17"
68.01% Pervious = 1.615 ac 31.99% Impervious = 0.760 ac

Summary for Subcatchment PS1:

Runoff = 2.25 cfs @ 11.99 hrs, Volume= 0.100 af, Depth> 0.90"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
24,628	61	>75% Grass cover, Good, HSG B
10,570	98	Paved parking, HSG B
2,995	98	Roofs, HSG B
19,713	55	Woods, Good, HSG B
57,906	68	Weighted Average
44,341		76.57% Pervious Area
13,565		23.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	486	0.1604	1.29		**Lag/CN Method,**

Summary for Subcatchment PS2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.63 cfs @ 11.97 hrs, Volume= 0.027 af, Depth> 1.01"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
10,544	61	>75% Grass cover, Good, HSG B
3,291	98	Paved parking, HSG B
13,835	70	Weighted Average
10,544		76.21% Pervious Area
3,291		23.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	283	0.1041	0.99		**Lag/CN Method,**
4.8	283	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PS2a: Primary Development

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.15 cfs @ 11.95 hrs, Volume= 0.095 af, Depth> 2.18"
Routed to Pond 1P : Proposed R-Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
6,448	61	>75% Grass cover, Good, HSG B
10,146	98	Paved parking, HSG B
6,083	98	Roofs, HSG B
22,677	87	Weighted Average
6,448		28.43% Pervious Area
16,229		71.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.22 cfs @ 11.98 hrs, Volume= 0.010 af, Depth> 0.57"
Routed to Pond DP2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

Area (sf)	CN	Description
9,025	61	>75% Grass cover, Good, HSG B
4	98	Unconnected pavement, HSG B
9,029	61	Weighted Average
9,025		99.96% Pervious Area
4		0.04% Impervious Area
4		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	28	0.1868	0.66		**Lag/CN Method,**
0.7	28	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond 1P: Proposed R-Tank

Inflow Area = 0.521 ac, 71.57% Impervious, Inflow Depth > 2.18" for 2-yr event
Inflow = 2.15 cfs @ 11.95 hrs, Volume= 0.095 af
Outflow = 1.02 cfs @ 12.06 hrs, Volume= 0.095 af, Atten= 53%, Lag= 6.1 min
Discarded = 0.16 cfs @ 11.60 hrs, Volume= 0.060 af
Primary = 0.86 cfs @ 12.06 hrs, Volume= 0.034 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 38.37' @ 12.06 hrs Surf.Area= 0.031 ac Storage= 0.027 af

Plug-Flow detention time= 14.5 min calculated for 0.095 af (100% of inflow)

Center-of-Mass det. time= 14.2 min (785.5 - 771.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	37.20'	0.023 af	**26.31'W x 50.92'L x 4.07'H Field A** 0.125 af Overall - 0.068 af Embedded = 0.057 af x 40.0% Voids
#2A	37.45'	0.064 af	**Ferguson R-Tank HD 2** x 340 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 340 Chambers in 17 Rows
		0.087 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	37.20'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	37.45'	**15.0" Round Culvert** L= 68.4' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.45' / 37.28' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	37.45'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Elev. (feet) 37.45 39.69 39.69 41.27 Width (feet) 0.30 0.30 4.00 4.00

Discarded OutFlow Max=0.16 cfs @ 11.60 hrs HW=37.24' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=0.85 cfs @ 12.06 hrs HW=38.36' (Free Discharge)
└**2=Culvert** (Passes 0.85 cfs of 2.01 cfs potential flow)
└**3=Custom Weir/Orifice** (Weir Controls 0.85 cfs @ 3.13 fps)

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.168 ac, 35.04% Impervious, Inflow Depth > 0.89" for 2-yr event
Inflow = 3.57 cfs @ 11.99 hrs, Volume= 0.161 af
Primary = 3.57 cfs @ 11.99 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.207 ac, 0.04% Impervious, Inflow Depth > 0.57" for 2-yr event
Inflow = 0.22 cfs @ 11.98 hrs, Volume= 0.010 af
Primary = 0.22 cfs @ 11.98 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PS1: Runoff Area=57,906 sf 23.43% Impervious Runoff Depth>2.11"
Flow Length=486' Slope=0.1604 '/' Tc=6.3 min CN=68 Runoff=5.31 cfs 0.234 af

Subcatchment PS2: Runoff Area=13,835 sf 23.79% Impervious Runoff Depth>2.27"
Flow Length=283' Slope=0.1041 '/' Tc=5.0 min CN=70 Runoff=1.42 cfs 0.060 af

Subcatchment PS2a: Primary Development Runoff Area=22,677 sf 71.57% Impervious Runoff Depth>3.87"
Tc=5.0 min CN=87 Runoff=3.66 cfs 0.168 af

Subcatchment PS3: Runoff Area=9,029 sf 0.04% Impervious Runoff Depth>1.56"
Flow Length=28' Slope=0.1868 '/' Tc=5.0 min CN=61 Runoff=0.64 cfs 0.027 af

Pond 1P: Proposed R-Tank Peak Elev=39.02' Storage=0.043 af Inflow=3.66 cfs 0.168 af
Discarded=0.16 cfs 0.089 af Primary=1.94 cfs 0.078 af Outflow=2.09 cfs 0.168 af

Pond DP1: Inflow=8.38 cfs 0.372 af
Primary=8.38 cfs 0.372 af

Pond DP2: Inflow=0.64 cfs 0.027 af
Primary=0.64 cfs 0.027 af

Total Runoff Area = 2.375 ac Runoff Volume = 0.488 af Average Runoff Depth = 2.47"
68.01% Pervious = 1.615 ac 31.99% Impervious = 0.760 ac

Summary for Subcatchment PS1:

Runoff = 5.31 cfs @ 11.98 hrs, Volume= 0.234 af, Depth> 2.11"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
24,628	61	>75% Grass cover, Good, HSG B
10,570	98	Paved parking, HSG B
2,995	98	Roofs, HSG B
19,713	55	Woods, Good, HSG B
57,906	68	Weighted Average
44,341		76.57% Pervious Area
13,565		23.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	486	0.1604	1.29		**Lag/CN Method,**

Summary for Subcatchment PS2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.42 cfs @ 11.96 hrs, Volume= 0.060 af, Depth> 2.27"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
10,544	61	>75% Grass cover, Good, HSG B
3,291	98	Paved parking, HSG B
13,835	70	Weighted Average
10,544		76.21% Pervious Area
3,291		23.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	283	0.1041	0.99		**Lag/CN Method,**
4.8	283	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PS2a: Primary Development

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.66 cfs @ 11.95 hrs, Volume= 0.168 af, Depth> 3.87"
Routed to Pond 1P : Proposed R-Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
6,448	61	>75% Grass cover, Good, HSG B
10,146	98	Paved parking, HSG B
6,083	98	Roofs, HSG B
22,677	87	Weighted Average
6,448		28.43% Pervious Area
16,229		71.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.64 cfs @ 11.97 hrs, Volume= 0.027 af, Depth> 1.56"
Routed to Pond DP2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

Area (sf)	CN	Description
9,025	61	>75% Grass cover, Good, HSG B
4	98	Unconnected pavement, HSG B
9,029	61	Weighted Average
9,025		99.96% Pervious Area
4		0.04% Impervious Area
4		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	28	0.1868	0.66		**Lag/CN Method,**
0.7	28	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond 1P: Proposed R-Tank

Inflow Area = 0.521 ac, 71.57% Impervious, Inflow Depth > 3.87" for 10-yr event
Inflow = 3.66 cfs @ 11.95 hrs, Volume= 0.168 af
Outflow = 2.09 cfs @ 12.04 hrs, Volume= 0.168 af, Atten= 43%, Lag= 5.3 min
Discarded = 0.16 cfs @ 11.25 hrs, Volume= 0.089 af
Primary = 1.94 cfs @ 12.04 hrs, Volume= 0.078 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 39.02' @ 12.04 hrs Surf.Area= 0.031 ac Storage= 0.043 af

Plug-Flow detention time= 14.2 min calculated for 0.167 af (100% of inflow)

Center-of-Mass det. time= 13.8 min (771.8 - 758.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	37.20'	0.023 af	**26.31'W x 50.92'L x 4.07'H Field A** 0.125 af Overall - 0.068 af Embedded = 0.057 af x 40.0% Voids
#2A	37.45'	0.064 af	**Ferguson R-Tank HD 2** x 340 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 340 Chambers in 17 Rows
		0.087 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	37.20'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	37.45'	**15.0" Round Culvert** L= 68.4' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.45' / 37.28' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	37.45'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Elev. (feet) 37.45 39.69 39.69 41.27 Width (feet) 0.30 0.30 4.00 4.00

Discarded OutFlow Max=0.16 cfs @ 11.25 hrs HW=37.24' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=1.92 cfs @ 12.04 hrs HW=39.01' (Free Discharge)
└**2=Culvert** (Passes 1.92 cfs of 4.28 cfs potential flow)
└**3=Custom Weir/Orifice** (Weir Controls 1.92 cfs @ 4.09 fps)

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.168 ac, 35.04% Impervious, Inflow Depth > 2.06" for 10-yr event
Inflow = 8.38 cfs @ 11.98 hrs, Volume= 0.372 af
Primary = 8.38 cfs @ 11.98 hrs, Volume= 0.372 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.207 ac, 0.04% Impervious, Inflow Depth > 1.56" for 10-yr event
Inflow = 0.64 cfs @ 11.97 hrs, Volume= 0.027 af
Primary = 0.64 cfs @ 11.97 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PS1: Runoff Area=57,906 sf 23.43% Impervious Runoff Depth>3.20"
Flow Length=486' Slope=0.1604 '/' Tc=6.3 min CN=68 Runoff=7.96 cfs 0.354 af

Subcatchment PS2: Runoff Area=13,835 sf 23.79% Impervious Runoff Depth>3.40"
Flow Length=283' Slope=0.1041 '/' Tc=5.0 min CN=70 Runoff=2.10 cfs 0.090 af

Subcatchment PS2a: Primary Development Runoff Area=22,677 sf 71.57% Impervious Runoff Depth>5.21"
Tc=5.0 min CN=87 Runoff=4.84 cfs 0.226 af

Subcatchment PS3: Runoff Area=9,029 sf 0.04% Impervious Runoff Depth>2.51"
Flow Length=28' Slope=0.1868 '/' Tc=5.0 min CN=61 Runoff=1.03 cfs 0.043 af

Pond 1P: Proposed R-Tank Peak Elev=39.49' Storage=0.055 af Inflow=4.84 cfs 0.226 af
Discarded=0.16 cfs 0.109 af Primary=2.85 cfs 0.117 af Outflow=3.01 cfs 0.226 af

Pond DP1: Inflow=12.55 cfs 0.561 af
Primary=12.55 cfs 0.561 af

Pond DP2: Inflow=1.03 cfs 0.043 af
Primary=1.03 cfs 0.043 af

Total Runoff Area = 2.375 ac Runoff Volume = 0.714 af Average Runoff Depth = 3.61"
68.01% Pervious = 1.615 ac 31.99% Impervious = 0.760 ac

Summary for Subcatchment PS1:

Runoff = 7.96 cfs @ 11.98 hrs, Volume= 0.354 af, Depth> 3.20"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
24,628	61	>75% Grass cover, Good, HSG B
10,570	98	Paved parking, HSG B
2,995	98	Roofs, HSG B
19,713	55	Woods, Good, HSG B
57,906	68	Weighted Average
44,341		76.57% Pervious Area
13,565		23.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	486	0.1604	1.29		**Lag/CN Method,**

Summary for Subcatchment PS2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.10 cfs @ 11.96 hrs, Volume= 0.090 af, Depth> 3.40"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
10,544	61	>75% Grass cover, Good, HSG B
3,291	98	Paved parking, HSG B
13,835	70	Weighted Average
10,544		76.21% Pervious Area
3,291		23.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	283	0.1041	0.99		**Lag/CN Method,**
4.8	283	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PS2a: Primary Development

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.84 cfs @ 11.95 hrs, Volume= 0.226 af, Depth> 5.21"
Routed to Pond 1P : Proposed R-Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
6,448	61	>75% Grass cover, Good, HSG B
10,146	98	Paved parking, HSG B
6,083	98	Roofs, HSG B
22,677	87	Weighted Average
6,448		28.43% Pervious Area
16,229		71.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.03 cfs @ 11.96 hrs, Volume= 0.043 af, Depth> 2.51"
Routed to Pond DP2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

Area (sf)	CN	Description
9,025	61	>75% Grass cover, Good, HSG B
4	98	Unconnected pavement, HSG B
9,029	61	Weighted Average
9,025		99.96% Pervious Area
4		0.04% Impervious Area
4		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	28	0.1868	0.66		**Lag/CN Method,**
0.7	28	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond 1P: Proposed R-Tank

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.521 ac, 71.57% Impervious, Inflow Depth > 5.21" for 25-yr event
Inflow = 4.84 cfs @ 11.95 hrs, Volume= 0.226 af
Outflow = 3.01 cfs @ 12.03 hrs, Volume= 0.226 af, Atten= 38%, Lag= 4.8 min
Discarded = 0.16 cfs @ 10.85 hrs, Volume= 0.109 af
Primary = 2.85 cfs @ 12.03 hrs, Volume= 0.117 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 39.49' @ 12.03 hrs Surf.Area= 0.031 ac Storage= 0.055 af

Plug-Flow detention time= 14.2 min calculated for 0.225 af (100% of inflow)
Center-of-Mass det. time= 13.8 min (765.5 - 751.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	37.20'	0.023 af	**26.31'W x 50.92'L x 4.07'H Field A** 0.125 af Overall - 0.068 af Embedded = 0.057 af x 40.0% Voids
#2A	37.45'	0.064 af	**Ferguson R-Tank HD 2** x 340 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 340 Chambers in 17 Rows
		0.087 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	37.20'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	37.45'	**15.0" Round Culvert** L= 68.4' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.45' / 37.28' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	37.45'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Elev. (feet) 37.45 39.69 39.69 41.27 Width (feet) 0.30 0.30 4.00 4.00

Discarded OutFlow Max=0.16 cfs @ 10.85 hrs HW=37.24' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=2.80 cfs @ 12.03 hrs HW=39.46' (Free Discharge)
└**2=Culvert** (Passes 2.80 cfs of 5.40 cfs potential flow)
└**3=Custom Weir/Orifice** (Weir Controls 2.80 cfs @ 4.64 fps)

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.168 ac, 35.04% Impervious, Inflow Depth > 3.11" for 25-yr event
Inflow = 12.55 cfs @ 11.98 hrs, Volume= 0.561 af
Primary = 12.55 cfs @ 11.98 hrs, Volume= 0.561 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.207 ac, 0.04% Impervious, Inflow Depth > 2.51" for 25-yr event
Inflow = 1.03 cfs @ 11.96 hrs, Volume= 0.043 af
Primary = 1.03 cfs @ 11.96 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PS1: Runoff Area=57,906 sf 23.43% Impervious Runoff Depth>4.30"
Flow Length=486' Slope=0.1604 '/' Tc=6.3 min CN=68 Runoff=10.59 cfs 0.476 af

Subcatchment PS2: Runoff Area=13,835 sf 23.79% Impervious Runoff Depth>4.53"
Flow Length=283' Slope=0.1041 '/' Tc=5.0 min CN=70 Runoff=2.77 cfs 0.120 af

Subcatchment PS2a: Primary Development Runoff Area=22,677 sf 71.57% Impervious Runoff Depth>6.50"
Tc=5.0 min CN=87 Runoff=5.95 cfs 0.282 af

Subcatchment PS3: Runoff Area=9,029 sf 0.04% Impervious Runoff Depth>3.50"
Flow Length=28' Slope=0.1868 '/' Tc=5.0 min CN=61 Runoff=1.43 cfs 0.061 af

Pond 1P: Proposed R-Tank Peak Elev=39.84' Storage=0.064 af Inflow=5.95 cfs 0.282 af
Discarded=0.16 cfs 0.125 af Primary=4.16 cfs 0.156 af Outflow=4.32 cfs 0.282 af

Pond DP1: Inflow=17.02 cfs 0.752 af
Primary=17.02 cfs 0.752 af

Pond DP2: Inflow=1.43 cfs 0.061 af
Primary=1.43 cfs 0.061 af

Total Runoff Area = 2.375 ac Runoff Volume = 0.938 af Average Runoff Depth = 4.74"
68.01% Pervious = 1.615 ac 31.99% Impervious = 0.760 ac

Summary for Subcatchment PS1:

Runoff = 10.59 cfs @ 11.98 hrs, Volume= 0.476 af, Depth> 4.30"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.49"

Area (sf)	CN	Description
24,628	61	>75% Grass cover, Good, HSG B
10,570	98	Paved parking, HSG B
2,995	98	Roofs, HSG B
19,713	55	Woods, Good, HSG B
57,906	68	Weighted Average
44,341		76.57% Pervious Area
13,565		23.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	486	0.1604	1.29		**Lag/CN Method,**

Summary for Subcatchment PS2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.77 cfs @ 11.96 hrs, Volume= 0.120 af, Depth> 4.53"
Routed to Pond DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.49"

Area (sf)	CN	Description
10,544	61	>75% Grass cover, Good, HSG B
3,291	98	Paved parking, HSG B
13,835	70	Weighted Average
10,544		76.21% Pervious Area
3,291		23.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	283	0.1041	0.99		**Lag/CN Method,**
4.8	283	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PS2a: Primary Development

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.95 cfs @ 11.95 hrs, Volume= 0.282 af, Depth> 6.50"
Routed to Pond 1P : Proposed R-Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.49"

Area (sf)	CN	Description
6,448	61	>75% Grass cover, Good, HSG B
10,146	98	Paved parking, HSG B
6,083	98	Roofs, HSG B
22,677	87	Weighted Average
6,448		28.43% Pervious Area
16,229		71.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.43 cfs @ 11.96 hrs, Volume= 0.061 af, Depth> 3.50"
Routed to Pond DP2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.49"

Area (sf)	CN	Description
9,025	61	>75% Grass cover, Good, HSG B
4	98	Unconnected pavement, HSG B
9,029	61	Weighted Average
9,025		99.96% Pervious Area
4		0.04% Impervious Area
4		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	28	0.1868	0.66		**Lag/CN Method,**
0.7	28	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond 1P: Proposed R-Tank

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.521 ac, 71.57% Impervious, Inflow Depth > 6.50" for 50-yr event
Inflow = 5.95 cfs @ 11.95 hrs, Volume= 0.282 af
Outflow = 4.32 cfs @ 12.01 hrs, Volume= 0.282 af, Atten= 27%, Lag= 3.8 min
Discarded = 0.16 cfs @ 10.45 hrs, Volume= 0.125 af
Primary = 4.16 cfs @ 12.01 hrs, Volume= 0.156 af
Routed to Pond DP1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 39.84' @ 12.02 hrs Surf.Area= 0.031 ac Storage= 0.064 af

Plug-Flow detention time= 14.2 min calculated for 0.281 af (100% of inflow)
Center-of-Mass det. time= 13.8 min (761.4 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	37.20'	0.023 af	**26.31'W x 50.92'L x 4.07'H Field A** 0.125 af Overall - 0.068 af Embedded = 0.057 af x 40.0% Voids
#2A	37.45'	0.064 af	**Ferguson R-Tank HD 2** x 340 Inside #1 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 340 Chambers in 17 Rows
		0.087 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	37.20'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	37.45'	**15.0" Round Culvert** L= 68.4' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.45' / 37.28' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	37.45'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Elev. (feet) 37.45 39.69 39.69 41.27 Width (feet) 0.30 0.30 4.00 4.00

Discarded OutFlow Max=0.16 cfs @ 10.45 hrs HW=37.24' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=4.00 cfs @ 12.01 hrs HW=39.80' (Free Discharge)
└**2=Culvert** (Passes 4.00 cfs of 6.31 cfs potential flow)
└**3=Custom Weir/Orifice** (Weir Controls 4.00 cfs @ 3.57 fps)

Summary for Pond DP1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.168 ac, 35.04% Impervious, Inflow Depth > 4.17" for 50-yr event
Inflow = 17.02 cfs @ 11.98 hrs, Volume= 0.752 af
Primary = 17.02 cfs @ 11.98 hrs, Volume= 0.752 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DP2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.207 ac, 0.04% Impervious, Inflow Depth > 3.50" for 50-yr event
Inflow = 1.43 cfs @ 11.96 hrs, Volume= 0.061 af
Primary = 1.43 cfs @ 11.96 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

APPENDIX D

SOIL SURVEY INFORMATION

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire

February 16, 2023

Custom Soil Resource Report
Soil Map

Map Scale: 1:829 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 40 80 160 240

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 25, Sep 12, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
799	Urban land-Canton complex, 3 to 15 percent slopes	1.4	100.0%
Totals for Area of Interest		**1.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

799—Urban land-Canton complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9cq0
Elevation: 0 to 1,000 feet
Mean annual precipitation: 42 to 46 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 55 percent
Canton and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Parent material: Till

Typical profile

H1 - 0 to 5 inches: gravelly fine sandy loam
H2 - 5 to 21 inches: gravelly fine sandy loam
H3 - 21 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 5 percent
Hydric soil rating: No

Scituate and newfields

Percent of map unit: 4 percent
Hydric soil rating: No

Chatfield

Percent of map unit: 4 percent
Hydric soil rating: No

Boxford and eldridge

Percent of map unit: 4 percent
Hydric soil rating: No

Walpole

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Squamscott and scitico

Percent of map unit: 4 percent
Landform: Marine terraces
Hydric soil rating: Yes

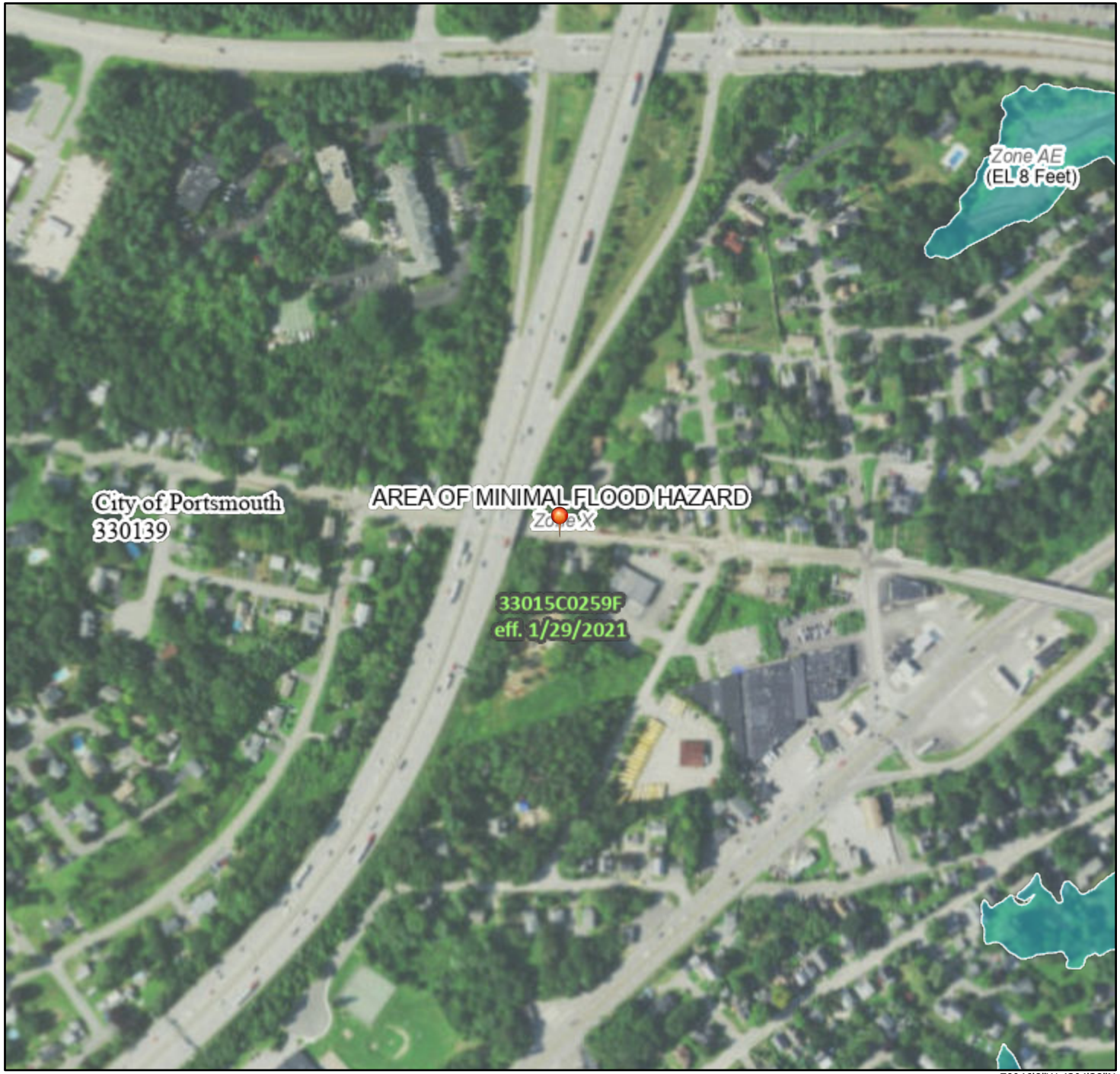
APPENDIX E

FEMA FIRM MAP

National Flood Hazard Layer FIRMette

FEMA

70°46'46"W 43°5'5"N



70°46'8"W 43°4'38"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/16/2023 at 11:49 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX F

INSPECTION & LONG TERM MAINTENANCE PLAN

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

INSPECTION & LONG-TERM MAINTENANCE PLAN
FOR
RESIDENTIAL DEVELOPMENT

686 MAPLEWOOD AVENUE
PORTSMOUTH, NH

Introduction

The intent of this plan is to provide Chinburg Developers (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the R-Tank Storage System and associated structures on the project site (collectively referred to as the "Stormwater Management System"). The contact information for the owner shall be kept current, and when the condominium ownership of the property is created, this plan must be transferred to the new owners.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help in maintaining a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the City of Portsmouth Public Works Department, as required.

Inspection & Maintenance Checklist/Log

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

Stormwater Management System Components

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Trees
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance
- Vegetated buffer area

Structural BMPs

Structural BMPs are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- Ferguson R-Tank® and PRETX® system
- Outlet Control Structures and Storm Drains

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMPs that may be found on this project.

1. **Grassed areas (until established):** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year.

Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide more permanent mulch or compost or other means of protection.

3. **Ferguson R-Tank® and PRETX® system:** Reference the attached operations and maintenance manual for proper maintenance of the system.
4. **Outlet Control Structures and Storm Drains:** Monitor accumulation of debris in outlet control structures monthly or after significant rain events. Remove sediments when they accumulate within the yard drains and outlet pipe. During construction, maintain inlet protection until the site has been stabilized. Prior to the end of construction, inspect the drains and basins for accumulations and remove and clean by jet-vacuuming.

Pollution Prevention

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.

Spill Procedures

Any discharge of waste oil or other pollutant shall be reported immediately to the New Hampshire Department of Environmental Services (NHDES). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system, and may be required by NHDES to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

Sanitary Facilities

Sanitary facilities shall be provided during all phases of construction.

Material Storage

No on site trash facility is provided until homes are constructed. The contractors are required to remove trash from the site. Hazardous material storage is prohibited.

Material Disposal

All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the fact-sheet created by the University of New Hampshire Cooperative Extension (or other source) or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.

Figure 1: Lythrum salicaria, Purple Loosestrife. Photo by Liz West.

Figure 2: Phragmites australis. Photo by Le Loup Gris

CLOSED DRAINAGE STRUCTURE LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Outlet Control Structures *-Drain Manholes* *-Catch Basins*	Every other Month	*Check for erosion or short-circuiting* *Check for sediment accumulation* *Check for floatable contaminants*
-Drainage Pipes	1 time per 2 years	*Check for sediment accumulation/clogging, or soiled runoff.* *Check for erosion at outlets.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

STABILIZED CONSTRUCTION ENTRANCE CONSTRUCTION MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
ENTRANCE SURFACE *-Check for sediment accumulation/clogging of stone* *-Check Vegetative filter strips*	After heavy rains, as necessary	*-Top dress pad with new stone.* *-Replace stone completely if completely clogged.* *-Maintain vigorous stand of vegetation.*
WASHING FACILITIES (if applicable) *-Monitor Sediment Accumulation*	As often as necessary	*-Remove Sediments from traps.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

CONVERGENT
WATER TECHNOLOGIES

PRETX OPERATION AND MAINTENANCE GUIDE

February 2020

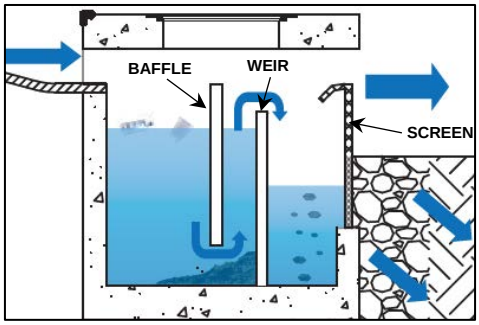
PRETX™ BIOFILTER PRETREATMENT
OPERATION AND MAINTENANCE GUIDANCE

PRETX systems provide pretreatment of sediment and debris prior to filtration and infiltration. Maintenance of PRETX pretreatment catch basins is simple and typically uses a standard vactor truck for cleaning. Simply remove the manhole cover and vactor out debris from within the sump and clean internal components by pressure washing. PRETX units are comprised of an outer precast concrete shell and consist of HDPE and stainless-steel internals that are resistant to rust and rot from corrosive winter runoff. Ideal tools include camera, shovel, hoe/rake, manhole pick, and tape measure. Appropriate Personal Protective Equipment (PPE) should be used in accordance with local authority or company procedures.

Routine annual inspections and periodic maintenance is required for the effective operation of PRETX systems. The Responsible Parties should maintain PRETX systems in accordance with the minimum design standards. This page provides guidance on maintenance activities that are typically required for PRETX systems, along with a suggested frequency for each activity. Individual systems may have more, or less, frequent maintenance needs, depending upon a variety of factors including land use intensity, seasonality, the occurrence of large storm events, overly wet or dry (i.e., drought) regional hydrologic conditions, and any changes or redevelopment in the upstream land use.

Activity	Frequency
NOTE: A properly functioning PRETX system will trap floatables such as bottles, cups, and leaves within the first sump area behind the baffle. Settleables such as sand, saturated leaves and trash will fall to the bottom of the sump area behind the weir wall. Lastly, removal of smaller debris such as cigarettes, grass clippings, etc. will be removed by the screened outlet.	Annual Inspection
Cleaning of PRETX systems is best conducted by a vactor truck with pressure washing for removal of accumulated sediment, trash, and debris.	
Remove maintenance cover and inspect for accumulation of trash and debris.	
Inspect for floatables behind baffle wall and remove as needed by vactor.	
Inspect for settleable behind weir wall and remove as needed by vactor.	
Inspect outlet screen for accumulated debris and clean as needed by pressure wash.	
Check the inlet area (curb throat or drop inlet grate) and surrounding pavement area immediately upstream for sediment deposition, weed growth, etc. Remove as needed with a broom and shovel or by vactor.	
Check to insure the PRETX system drains to the outvert level completely after storm events.	
This process is to be repeated until proper drainage and function has been restored.	As Needed
Repair or replace any damaged structural parts, inlets, outlets, grates.	

TOP VIEW WITH COVER REMOVED



SIDE VIEW OF TRASH AND DEBRIS ACCUMULATION

REAR VIEW OF OUTLET SCREEN

February 2020

CHECKLIST FOR OPERATION & MAINTENANCE
PRETX™ BIOFILTER PRETREATMENT

Location:

Inspector:

Date: Time: Site Conditions:

Date Since Last Rain Event:

NOTE: A properly functioning PRETX system will trap floatables such as bottles, cups, and leaves within the first sump area behind the baffle. Settleables such as sand, saturated leaves and trash will fall to the bottom of the sump area behind the weir wall. Lastly, removal of smaller debris such as cigarettes, grass clippings, etc. will be removed by the screened outlet.

Inspection Items	Satisfactory (S) or Unsatisfactory (U)		Comments/Corrective Action
1. Remove maintenance cover to allow for visual inspection	**S**	**U**	
2. Complete drainage of PRETX system to outvert elevation after storm flow ceases	**S**	**U**	
3. Proper grading and drainage to PRETX inlet and outlet, no evidence of short-circuit or bypass of flow around or under structure	**S**	**U**	
4. Accumulation of settleable trash and debris within PRETX sump is 6” or less	**S**	**U**	
5. Sump area is empty of floatable trash and debris. Excessive accumulation of floatables will bypass baffle wall.	**S**	**U**	
6. Outlet screen is clear of debris	**S**	**U**	
7. Clogging and function of inlet/outlet components	**S**	**U**	
8. Cracking, spalling, or deterioration of concrete	**S**	**U**	
9. Nuisance vegetation, animal burrows, or settling of structure	**S**	**U**	
10. Undesirable odors	**S**	**U**	
11. Complaints from residents	**S**	**U**	
12. Public hazards noted	**S**	**U**	
13.	**S**	**U**	
14.	**S**	**U**	
15.	**S**	**U**	

Corrective Action Needed	Due Date
1.	
2.	
3.	
4.	
5.	

R-TANK® OPERATION, INSPECTION AND MAINTENANCE

Operation

Your R-Tank System has been designed to function in conjunction with the engineered drainage system on your site, the existing municipal infrastructure, and/or the existing soils and geography of the receiving watershed. Unless your site included certain unique and rare features, the operation of your R-Tank System will be driven by naturally occurring systems and will function autonomously. However, upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system.

Inspection

Both the R-Tank and all stormwater pre-treatment features incorporated into your site must be inspected regularly. Inspections should be done every six months for the first year of operation, and at least yearly thereafter. Inspections may be required more frequently for pre-treatment systems. You should refer to the manufacturer requirements for the proper inspection schedule.

With the right equipment most inspections and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, you must follow all local, regional, and OSHA requirements.

All maintenance features of your system can be accessed through a covering at the surface. With the lid removed, you can visually inspect each component to identify sediment, trash, and other contaminants within the structure. Check you construction plans to identify the maintenance features engineered into your R-Tank system, which may include:

Upstream Pipes, Inlets, and Manholes

- Working from the structures adjacent the R-Tank toward those farther away, check for debris and sediment in both the structures and the pipes. Be sure to Include all structures that contain pre- treatment systems. Some structures may include a sump.

Maintenance Ports

- Located near the inlet and outlet connections and throughout the system, check sediment depth at each port.

Inspection Ports

- Less common, inspection ports are primarily located within the Treatment Row of an R-Tank System. These should be used to check for sediment deposits but are typically too small to access for backflushing.

Treatment Row

- On installations in 2018 or later, inlet pipes may connect to a row of modules with 12” diameter access holes running horizontally through the module that can be jet vacuumed. Check these rows for accumulation of sediment and debris.

All observations and measurements should be recorded on an Inspection Log kept on file. We’ve included a form you can use at the end of this guide.

Maintenance

For modules taller than 40” the R-Tank System should be back-flushed once sediment accumulation has reached 6”. For modules less than 40” tall, perform maintenance when sediment depths are greater than 15% of the total system height.

If your system includes a Treatment Row with linear access through the modules from the inlet pipe, backflush this area when sediment depths reach 6”.

BEFORE ANY MAINTENANCE IS PERFORMED ON YOUR SYSTEM -
PLUG THE OUTLET PIPE TO PREVENT CONTAMINATION OF THE DOWNSTREAM SYSTEMS.

Begin by cleaning all upstream structures, pipes, and pre-treatment systems containing sediment and/or debris. If your system includes a Treatment Row, this portion of the system should be cleaned with traditional jet-vac equipment. Add a centralizer to the jet for easiest access through the modules.

To back-flush the R-Tank, water is pumped into the system through the Maintenance Ports as rapidly as possible. The turbulent action of the water moving through the R-Tank will suspend sediments which may then be pumped out. If your system includes an Outlet Structure, this will be the ideal location to pump contaminated water out of the system. However, removal of back-flush water may be accomplished through the Maintenance Ports, as well.

For systems with large footprints that would require extensive volumes of water to properly flush the system, you should consider performing your maintenance within 24 hours of a rain event. Stormwater entering the system will aid in the suspension of sediments and reduce the volume of water required to properly flush the system.

STEP BY STEP INSTRUCTIONS FOR INSPECTION AND MAINTENANCE CAN BE FOUND ON THE NEXT PAGE, WITH A MAINTENANCE LOG ON THE LAST PAGE.

INSPECTION

1. Upstream Structures
    a. Remove cover
    b. Use flashlight to detect sediment deposits If present, measure sediment depth
    c. Inspect pipes connecting to R-Tank
        i. If inlet pipes connect to Treatment Row, check sediment depth within these modules
        ii. If access for measurement inside the Treatment Row is difficult, sediment depth can be estimated based on the coverage of the round, 12” opening of the module
    d. Inspect pre-treatment systems (if present)
    e. Record results on Maintenance Log
    f. Replace cover
    g. Repeat for ALL Manholes upstream of R-Tank until no sedimentation is observed and all pre- treatment systems have been checked
2. Maintenance Ports
    a. Remove cap
    b. Use flashlight to detect sediment deposits
    c. If present, measure sediment depth with stadia rod
    d. Record results on maintenance log
    e. Replace cap
    f. Repeat for ALL Maintenance Ports
3. Inspection Port
    a. Remove cap
    b. Use flashlight to detect sediment deposits
    c. If present, measure sediment depth with stadia rod
    d. Record results on Maintenance Log
    e. Replace cap

MAINTENANCE

1. Plug system outlet to prevent discharge of back-flush water
2. Vacuum all upstream structures, inlet pipes, and stormwater pre-treatment systems
3. If a Treatment Row is present, vacuum this row of modules
4. Determine best location to pump out back-flush water. Typically, the outlet structure will work best, but sometimes the Maintenance Ports must be used.
5. Remove cap from Maintenance Port and pump water as rapidly as possible into system through port to suspend sediments, pumping dirty water out of the system from the outlet or nearby Maintenance Port
6. Repeat at all Maintenance Ports until sediment levels are reduced to a satisfactory level
7. Sediment-laden water shall be disposed of per local regulations
8. Replace any remaining caps or covers and remove outlet plug
9. Record the back-flushing event in your Maintenance Log with any relevant specifics

R-Tank® Maintenance Log

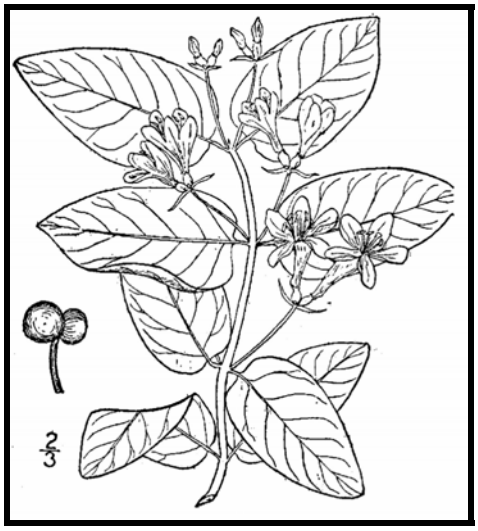
Site Name:		Company:	
Location:		Contact:	
City and State:		Phone:	
System Owner:		Email:	

Date	Location	Sediment Depth	Observations / Notes	Initials

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

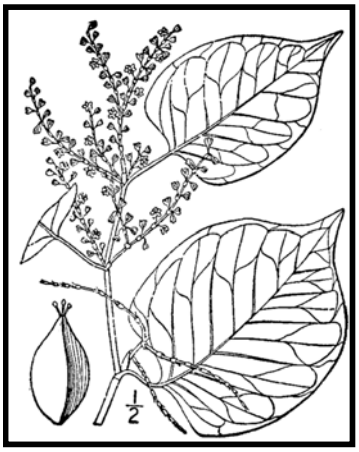
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">garlic mustard
(Alliaria petiolata)
spotted knapweed
(Centaurea maculosa)
▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.
black swallow-wort
(Cynanchum nigrum)
▪ May cause skin rash. Wear gloves and long sleeves when handling.
pale swallow-wort
(Cynanchum rossicum)
giant hogweed
(Heracleum mantegazzianum)
▪ Can cause major skin rash. Wear gloves and long sleeves when handling.
dame’s rocket
(Hesperis matronalis)
perennial pepperweed
(Lepidium latifolium)
purple loosestrife
(Lythrum salicaria)
Japanese stilt grass
(Microstegium vimineum)
mile-a-minute weed
(Polygonum perfoliatum)</td><td rowspan="2">Fruits and Seeds
  </td><td>Prior to flowering
Depends on scale of infestation
Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>During and following flowering
Do nothing until the following year or remove flowering heads and bag and let rot.

Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>Fruits, Seeds, Plant Fragments
Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn’t materially influence disposal activities.</td><td>Small infestation
▪ Bag all plant material and let rot.
▪ Never pile and use resulting material as compost.
▪ Burn.

Large infestation
▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.
▪ Monitor and remove any sprouting material.
▪ Pile, let dry, and burn.</td></tr>
</table>

January 2010

PROPOSED SITE PLAN
RESIDENTIAL DEVELOPMENT
686 MAPLEWOOD AVENUE
PORTSMOUTH, NEW HAMPSHIRE
PERMIT PLANS

APPLICANT:

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
Tel. (603) 868–5995

OWNER:

ISLAMIC SOCIETY OF
THE SEACOAST AREA
42N DOVER POINT ROAD
DOVER, NH 03820

CIVIL ENGINEER & LAND SURVEYOR:

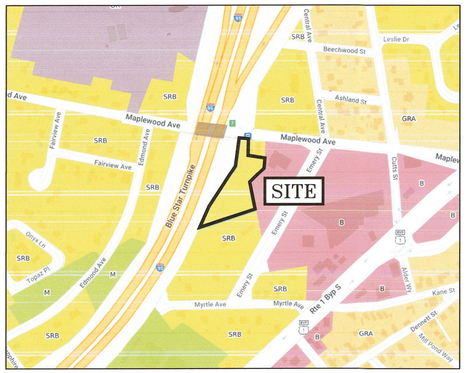
AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801
Tel. (603) 430–9282
Fax (603) 436–2315

ARCHITECT:

CJ ARCHITECTS
233 VAUGHAN STREET, SUITE 101
PORTSMOUTH, NH, 03801
Tel. (603) 431–2808

LEGAL REPRESENTATION:

DONAHUE, TUCKER & CIANDELLA, PLLC
111 MAPLEWOOD AVE., SUITE D
PORTSMOUTH, NH, 03801
Tel. (603) 766–1686



Legend

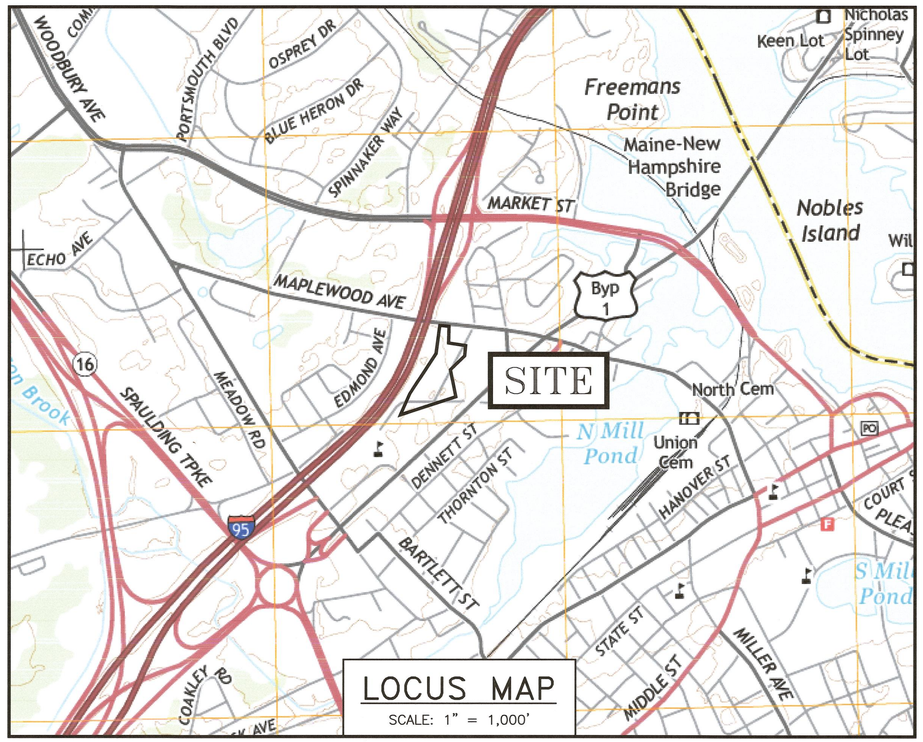
Character Districts
Character-Based Zoning Area
(Refer to Zoning Map Sheet 2 of 2
Character Districts Regulating Plan)

Residential Districts

R	Rural
SRA	Single Residence A
SRB	Single Residence B
GRA	General Residence A
GRB	General Residence B
GRC	General Residence C
GA/MH	Garden Apartment/Mobile Home Park

Mixed Residential Districts

MRO	Mixed Residential Office
MRB	Mixed Residential Business



LOCUS MAP
SCALE: 1" = 1,000'

REQUIRED PERMITS:
PORTSMOUTH BOA: APPROVED
PORTSMOUTH SITE PLAN: PENDING
DES SEWER EXTENSION: TBD
DES WATER MAIN: TBD

LEGEND:

EXISTING	PROPOSED	
		PROPERTY LINE
		SETBACK
S	S	SEWER PIPE
SL	SL	SEWER LATERAL
G	G	GAS LINE
D	D	STORM DRAIN
W	W	WATER LINE
WS	WS	WATER SERVICE
UGE	UGE	UNDERGROUND ELECTRIC
OHW	OHW	OVERHEAD ELECTRIC/WIRES
	UD	FOUNDATION DRAIN
		EDGE OF PAVEMENT (EP)
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		UTILITY POLE
		WALL MOUNTED EXTERIOR LIGHTS
		TRANSFORMER ON CONCRETE PAD
		ELECTRIC HANDHOLD
		SHUT OFFS (WATER/GAS)
	GV	GATE VALVE
	HYD	HYDRANT
CB	CB	CATCH BASIN
S	SMH	SEWER MANHOLE
D	DMH	DRAIN MANHOLE
T	TMH	TELEPHONE MANHOLE
14	14	PARKING SPACE COUNT
PKM		PARKING METER
LSA		LANDSCAPED AREA
TBD	TBD	TO BE DETERMINED
CI	CI	CAST IRON PIPE
COP	COP	COPPER PIPE
DI	DI	DUCTILE IRON PIPE
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
AC	–	ASBESTOS CEMENT PIPE
VC	VC	VITRIFIED CLAY PIPE
EP	EP	EDGE OF PAVEMENT
EL.	EL.	ELEVATION
FF	FF	FINISHED FLOOR
INV	INV	INVERT
S =	S =	SLOPE FT/FT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL

DIG SAFE
– ME – NH – RI – VT
1–888–344–7233
CALL TOLL FREE

PORTSMOUTH APPROVAL CONDITIONS NOTE:
ALL CONDITIONS ON THIS PLAN SET SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS.

APPROVED BY THE PORTSMOUTH ZONING BOARD

CHAIRMAN _____ DATE _____

INDEX OF SHEETS

UTILITY CONTACTS

ELECTRIC:
EVERSOURCE
1700 LAFAYETTE ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 436–7708, Ext. 555.5678
ATTN: MICHAEL BUSBY, P.E. (MANAGER)

NATURAL GAS:
UNITIL
325 WEST ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 294–5144
ATTN: DAVE BEAULIEU

CABLE:
COMCAST
155 COMMERCE WAY
PORTSMOUTH, N.H. 03801
Tel. (603) 679–5695 (X1037)
ATTN: MIKE COLLINS

SEWER & WATER:
PORTSMOUTH DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 766–1438 ATTN: JIM TOW

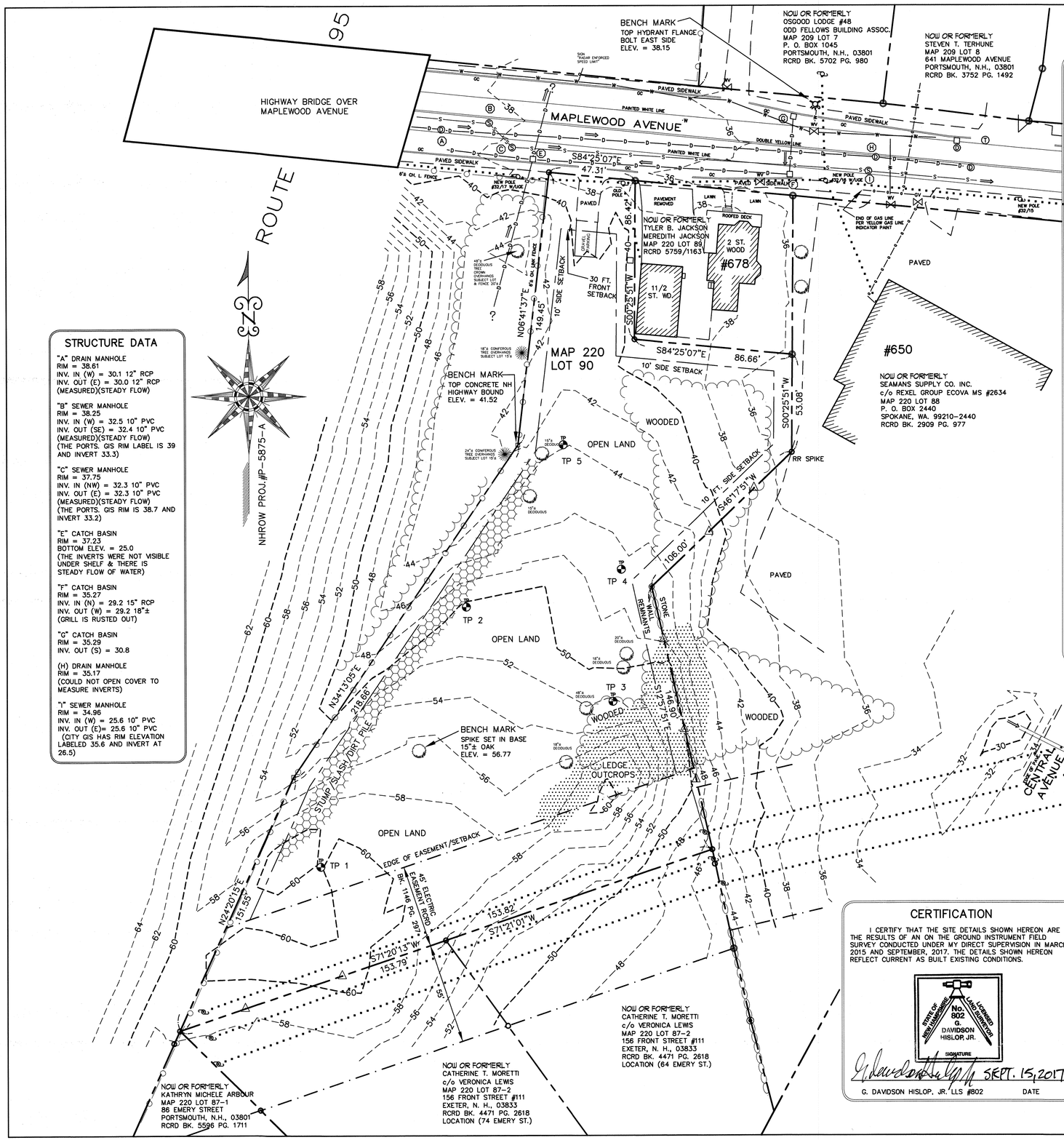
COMMUNICATIONS:
FAIRPOINT COMMUNICATIONS
JOE CONSIDINE
1575 GREENLAND ROAD
GREENLAND, N.H. 03840
Tel. (603) 427–5525

PROPOSED SITE PLAN
RESIDENTIAL DEVELOPMENT
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

PLAN SET SUBMITTAL DATE: 23 OCTOBER 2023

2360.01



STRUCTURE DATA

"A" DRAIN MANHOLE
RIM = 38.61
INV. IN (W) = 30.1 12" RCP
INV. OUT (E) = 30.0 12" RCP
(MEASURED)(STEADY FLOW)

"B" SEWER MANHOLE
RIM = 38.25
INV. IN (W) = 32.5 10" PVC
INV. OUT (SE) = 32.4 10" PVC
(MEASURED)(STEADY FLOW)
(THE PORTS. GIS RIM LABEL IS 39 AND INVERT 33.3)

"C" SEWER MANHOLE
RIM = 37.75
INV. IN (NW) = 32.3 10" PVC
INV. OUT (E) = 32.3 10" PVC
(MEASURED)(STEADY FLOW)
(THE PORTS. GIS RIM IS 38.7 AND INVERT 33.2)

"E" CATCH BASIN
RIM = 37.23
BOTTOM ELEV. = 25.0
(THE INVERTS WERE NOT VISIBLE UNDER SHELF & THERE IS STEADY FLOW OF WATER)

"F" CATCH BASIN
RIM = 35.27
INV. IN (N) = 29.2 15" RCP
INV. OUT (W) = 29.2 18"±
(GRILL IS RUSTED OUT)

"G" CATCH BASIN
RIM = 35.29
INV. OUT (S) = 30.8

(H) DRAIN MANHOLE
RIM = 35.17
(COULD NOT OPEN COVER TO MEASURE INVERTS)

"I" SEWER MANHOLE
RIM = 34.96
INV. IN (W) = 25.6 10" PVC
INV. OUT (E)= 25.6 10" PVC
(CITY GIS HAS RIM ELEVATION LABELED 35.6 AND INVERT AT 26.5)

GENERAL NOTES:

1.) ZONING DISTRICT– "SRB" SINGLE RESIDENCE "B"
MIN. LOT AREA = 15,000 S.F.
MIN. FRONTAGE = 100'
MIN. LOT DEPTH = 100'
BUILDING SETBACKS
FRONT SETBACK = 30'
REAR SETBACK = 30'
SIDE SETBACK = 10'
WETLANDS SETBACK = 100' (10,000 S.F. OR GREATER)
WET LIMITED CUT ZONE = 50' (10,000 S.F. OR GREATER)
WET VEGETATED BUFFER = 25' (10,000 S.F. OR GREATER)
BUILDING RESTRICTIONS
MAX. HEIGHT = 35'
MAX. BUILDING COVERAGE = 20%
MIN OPEN SPACE = 40%

2.) THIS IS AN AS-BUILT PLAN DEPICTING EXISTING CONDITIONS AS OF APRIL 2015 AND UPDATED SEPTEMBER 2017. THE LOT CORNER/LOT LINE MONUMENT LOCATIONS WERE HELD AS SHOWN ON THIS PLAN. THE BEARINGS AND DISTANCES MAY VARY SLIGHTLY FROM THE CALCULATED RECORDED DISTANCE AND BEARINGS PER REFERENCE PLAN #4 (RCRD D-38016). THE BEARING BASE IS NH GRID NORTH PER ABOVE PLAN REF. #1 (NH PROJ. P-5875-A). THIS AUTOCAD DRAWING HAS BEEN SHIFTED ONTO PORTSMOUTH GIS COORDINATES NH NAD83 GRID NORTH AS DIRECTED BY PORTSMOUTH GIS DEPT..

3.) THE ELEVATION DATUM BASE IS NAVD88 ESTABLISHED USING THE HYDRANT FLANGE BOLT BENCH MARK ON MYRTLE AVENUE. THIS IS DEPICTED AS TBM-1 ELEVATION 45.86 ON RECORDED PLAN RCRD PLAN # D-37764. PLAN D-37664 NOTES ELEVATION DATUM ESTABLISHED BY SURVEY GRADE GPS READINGS.

4.) THE ABUTTER HOUSE AND GARAGE/APARTMENT AT 678 MAPLEWOOD IS SERVICED BY CITY SEWER AND WATER. PORTSMOUTH COMPUTERIZED GIS UTILITY INFORMATION WAS OBTAINED FROM PORTSMOUTH DPW. THE DIAGRAM INDICATES SEWER, DRAIN AND WATER IS IN THE STREET. THE GIS DIAGRAM DOES NOT INDICATE HOW SUBJECT LOT HOUSE AND GARAGE APARTMENT ARE HOOKED INTO WATER AND SEWER. THE PORTS. WATER/SEWER DIVISION FOREMAN JOHN ADAMS DOES NOT KNOW OF ANY UTILITY RECORDS AVAILABLE TO SHOW THE LOCATION OF THE UTILITY SERVICE CONNECTIONS. THIS APARTMENT (FORMER GARAGE) HAS BEEN GUTTED AND NEW INTERIOR ROOMS ARE CURRENTLY UNDER CONSTRUCTION. THE CARPENTER INDICATED THAT SEWER AND WATER SERVICE WAS FROM THE BIG HOUSE BETWEEN BUILDINGS.

5.) SUBJECT PROPERTIES DO NOT LIE IN A FLOOD HAZARD ZONE AS SHOWN ON ROCKINGHAM COUNTY FLOOD INSURANCE RATE MAP (FIRM) FOR CITY OF PORTSMOUTH COMMUNITY #330139, PANEL #0259, SUFFIX "E" AND KNOWN AS MAP #33015C0259E WITH AN EFFECTIVE DATE OF MAY 17, 2005.

6.) ABUTTING PROPERTY AT #678 MAPLEWOOD HAS A TWO STORY HOUSE AND A SEPARATE GARAGE (GARAGE NOW BEING REFRAMED WITH ABOVE APARTMENT). A VARIANCE WAS GRANTED APRIL 10, 1979 TO ALLOW CONVERSION OF THE SECOND FLOOR OF AN EXISTING GARAGE INTO AN APARTMENT IN A SINGLE RESIDENCE II DISTRICT. A BUILDING PERMIT WAS GIVEN APRIL 25, 1979.

7.) SUBJECT LOT MAP 220 LOT 90 IS A VACANT LOT PARTLY WOODED. THIS PROPERTY IS REFERED TO AS #686 MAPLEWOOD AVENUE IN A DRIVEWAY PERMIT APPLICATION DATED 7-31-12. THE PAVED SIDEWALK CURBING WAS REMOVED WHERE THE PAVED DRIVEWAY IS NOW LOCATED AS SHOWN HEREON.

8.) THE UNDERGROUND GAS SERVICE SHOWN HEREON IN FRONT OF 650 MAPLEWOOD AVE. WAS PLOTTED FROM YELLOW GAS LINE PAINT MARKINGS LOCATED BY FIELD SURVEY. THE GAS PAINT MARKS INDICATES THE GAS LINE ENDS BEFORE CROSSING IN FRONT OF SUBJECT LOT AS SHOWN.

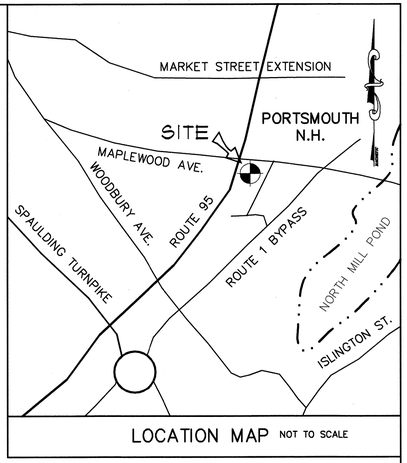
9.) UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE, BEING PLOTTED FROM OBSERVED ABOVE GROUND STRUCTURES AND PAINT MARKS.

10.) SUBJECT LOT 90 SUBJECT TO AN ELECTRIC EASEMENT PER RCRD BK. 1146 PG. 297. THIS EASEMENT IS ON THE REAR 45 FEET OF SUBJECT LOT 90 ADJOINING THE MORETTI PROPERTIES AS SHOWN AND ALLOWS FOR THE ELECTRIC TRANSMISSION LINES OPERATION AND MAINTENANCE. THERE IS CURRENTLY AN OVERHEAD ELECTRIC LINE CROSSING SUBJECT LOT AS SHOWN.

11.) SUBJECT LOT SUBJECT TO AN EASEMENT TO PERMIT THE STAIRWAY AND DECK ON APARTMENT BUILDING THAT ENCROACH SUBJECT LOT 90 PER RCRD BK. 5759 PG. 1160. THIS EASEMENT TO EXTINGUISH UPON REMOVAL OF ENCROACHING DECK AND STAIRS IF NOT REPLACED WITHIN 6 MONTHES OF REMOVAL. THE ENCROACHING STAIRS AND DECK ON THE WEST SIDE OF THE APARTMENT (GARAGE) BUILDING WERE REMOVED AS OF SEPT. 7, 2017.

12.) JOSEPH W. NOEL, N.H. CERTIFIED WETLAND SCIENTIST #086, (207-384-5587) INVESTIGATED THE SUBJECT PROPERTIES LOT 89 & LOT 90 APRIL 4, 2015 AND THERE WERE NO WETLANDS.

13.) PER PORTSMOUTH PLANNING DEPT. SUBJECT PROPERTY MAP 220 LOT 90 AT 686 MAPLEWOOD AVENUE RECEIVED A VARIANCE ON FEB. 21, 2017 TO PERMIT THE CONSTRUCTION OF A 4,000 SQ. FOOT PLACE OF WORSHIP AND A VARIANCE FOR REQUIRED FRONTAGE.



LOCATION MAP NOT TO SCALE

PLAN REFERENCES:

1.) STATE OF N. H. DEPT. OF PUBLIC WORKS AND HIGHWAYS FEDERAL AID RIGHT OF WAY PROJECT #1-95-1(9)14, INTERSTATE ROUTE 95 N. H. PROJECT #P-5875-A RCRD PLAN #D-2229-6.

2.) STATE OF N. H. DEPT. OF PUBLIC WORKS AND HIGHWAYS FEDERAL AID RIGHT OF WAY PROJECT #1-95-1(10)14, INTERSTATE ROUTE 95 N. H. PROJECT #P-5875-B, RCRD PLAN #D-2498-3.

3.) "PROPOSED DIVISION OF LAND OF CATHERINE T. MORETTI, PHASE 2 – MYRTLE AVENUE & CENTRAL AVENUE PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE" BY CIVIL CONSULTANTS ENGINEERS, REVISED 5-30-2014, RCRD PLAN #D-38286. (SEE ALSO EARLIER PLAN RCRD PLAN #D-37764)

4.) "CORRECTION PLAN, LAND BOUNDARY SURVEY PLAN DEPICTING LAND OWNED BY INDEPENDENT ORDER OF ODD FELLOWS, OSGOOD LODGE #48 KNOWN AS TAX MAP 209 LOT 6/#651 MAPLEWOOD AVE. AND DEPICTING LAND OWNED BY WARREN V. STEARNS & HELEN W. STEARNS KNOWN AS TAX MAP 220 LOT 89/#678 MAPLEWOOD AVE AND DEPICTING LAND OWNED BY WARREN V. STEARNS KNOWN AS TAX MAP 220 LOT 90" BY KNIGHT HILL LAND SURVEYING SERVICES, INC. DATED OCT., 2003, REVISED NOV. 19, 2013, RCRD PLAN #D-38016.

SITE DATA
TAX MAP 220 LOT 90

OWNER OF RECORD:
ISLAMIC SOCIETY OF THE SEACOAST AREA
42N DOVER POINT ROAD
DOVER, N. H., 03820

DEED: RCRD BK. 5806 PG. 2816

AREA: 1.44 ACRE

CERTIFICATION

I CERTIFY THAT THE SITE DETAILS SHOWN HEREON ARE THE RESULTS OF AN ON THE GROUND INSTRUMENT FIELD SURVEY CONDUCTED UNDER MY DIRECT SUPERVISION IN MARCH 2015 AND SEPTEMBER, 2017. THE DETAILS SHOWN HEREON REFLECT CURRENT AS BUILT EXISTING CONDITIONS.

STATE OF NEW HAMPSHIRE No. 802 G. DAVIDSON HISLOP, JR. LICENSED LAND SURVEYOR SIGNATURE

SEPT. 15, 2017

G. DAVIDSON HISLOP, JR. LLS #802 DATE

LEGEND

PROPERTY LINE
EDGE OF PAVEMENT
IRON PIPE OR PIN
DRILL HOLE IN STONE WALL
N. H. HIGHWAY BOUND
EDGE OF EASEMENT
APROX. EDGE OF WOODS
STONE WALL
CATCH BASIN
WATER SHUT OFF VALVE
BELL MANHOLE
SEWER MANHOLE
UTILITY POLE
OVERHEAD ELECTRIC
APPROX. UNDERGROUND DRAIN
SIGN
SETBACK
ROCKINGHAM COUNTY REGISTRY OF DEEDS RCRD
DECIDUOUS TREE
CONIFEROUS TREE
DRAIN MANHOLE
GAS SHUT OFF VALVE
CHAIN LINK FENCE
STUMP/DIRT/SLASH PILE
APROX. UNDERGROUND SEWER
GRANITE CURB
APROX. UNDERGROUND WATER
APROX. UNDERGROUND GAS
LEDGE OUTCROP AREA
2 FOOT CONTOUR
CONTOUR AT EVEN 10 FOOT
TALL STAKE SET ON LOT LINE

EXISTING CONDITIONS & TOPOGRAPHY PLAN

for vacant lot known as

TAX MAP 220 LOT 90

owned by

ISLAMIC SOCIETY OF THE SEACOAST AREA

located at

686 MAPLEWOOD AVENUE
PORTSMOUTH, NEW HAMPSHIRE
ROCKINGHAM COUNTY

DATE: SEPT. 14, 2017 SCALE: 1" = 30' PROJECT # 1938ASBUILT

PREPARED FOR:
ISLAMIC SOCIETY OF THE SEACOAST AREA
42N DOVER POINT RD.
DOVER, N. H., 03820
c/o MOHAMMED EBRAHIM, PH.D., P.E.
attn: DOUG LAROSA
dj@ambitengineering.com
603-430-9282 (312)

PREPARED BY:
KNIGHT HILL LAND SURVEYING SERVICES, INC.
c/o DAVE HISLOP
34 OLD POST ROAD
NEWINGTON, N. H. 03801
(603) 436-1330
dave@khlandsurveying.com

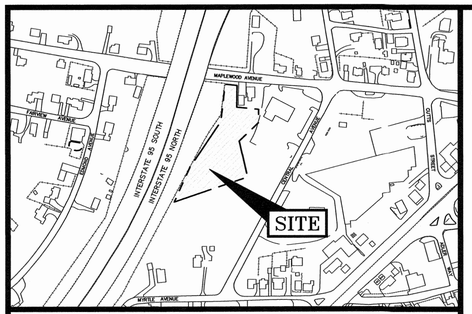
GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

1938PNTS

2360



LOCATION MAP SCALE 1"=300'

LEGEND: SEE COVER SHEET

TEST PIT 1, ELEV. 60.1

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 24"

DEPTH	DESCRIPTION
0" – 6"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE
6" – 24"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT 2, ELEV. 50.1

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 28"

DEPTH	DESCRIPTION
0" – 5"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE
5" – 28"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT 3, ELEV. 52.1

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 27"

DEPTH	DESCRIPTION
0" – 6"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE
6" – 27"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT 4, ELEV. 44.5

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 30"

DEPTH	DESCRIPTION
0" – 8"	10YR 4/3 FINE SANDY LOAM, MASSIVE, FRIABLE
8" – 30"	10YR 4/6 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT 5, ELEV. 43.5

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 25"

DEPTH	DESCRIPTION
0" – 5"	10YR 4/3 FINE SANDY LOAM, MASSIVE, FRIABLE
5" – 25"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE

ABUTTERS:

209/07
N/F
OSGOOD LODGE NO. 48 ODDFELLOWS BLDG ASSOC.
P.O. BOX 1045
PORTSMOUTH, NH 03802
6354/1704

220/87-1
N/F
JEFFREY MATTSON &
KATHRYN MICHELE ARBOUR
86 EMERY STREET
PORTSMOUTH, NH 03801
6085/200

220/87-2
N/F
HAPPY MOUNTAIN HOLDINGS LLC
901 N MARKET ST SUITE 705
WILMINGTON, DE 19801
5905/2552

220/87-2-1
N/F
CARL & DEBORAH ROCHE
64 EMERY STREET, UNIT #1
PORTSMOUTH, NH 03801
6147/2870

220/87-2-2
N/F
BETTY J. SWANTON
64 EMERY STREET, UNIT #2
PORTSMOUTH, NH 03801
6121/2485

220/87-2-3
N/F
SUSAN ZIMMERMANN
48 NORTH STATE STREET
CONCORD, NH 03301
6184/111

220/87-2-4
N/F
JAIME PRIDHAM
74 EMERY STREET, UNIT #4
PORTSMOUTH, NH 03801
6142/69

220/87-3
N/F
HAPPY MOUNTAIN HOLDINGS LLC
901 N MARKET ST SUITE 705
WILMINGTON, DE 19801
5905/2552

220/88
N/F
650 MAPLEWOOD, LLC
3 CATE STREET
PORTSMOUTH, NH 03801
6367/690

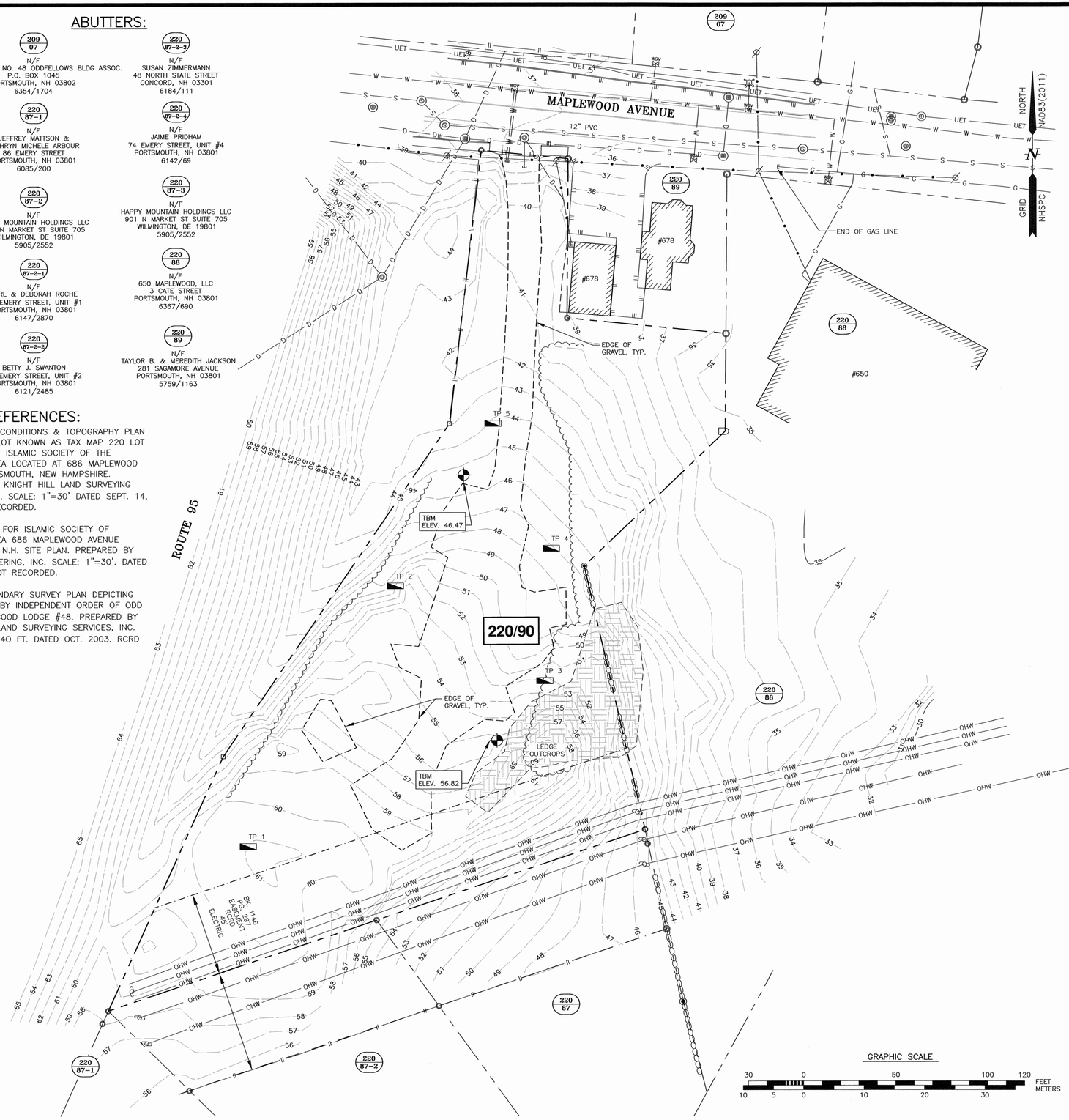
220/89
N/F
TAYLOR B. & MEREDITH JACKSON
281 SAGAMORE AVENUE
PORTSMOUTH, NH 03801
5759/1163

PLAN REFERENCES:

1) EXISTING CONDITIONS & TOPOGRAPHY PLAN FOR VACANT LOT KNOWN AS TAX MAP 220 LOT 90 OWNED BY ISLAMIC SOCIETY OF THE SEACOAST AREA LOCATED AT 686 MAPLEWOOD AVENUE PORTSMOUTH, NEW HAMPSHIRE. PREPARED BY KNIGHT HILL LAND SURVEYING SERVICES, INC. SCALE: 1"=30' DATED SEPT. 14, 2017. NOT RECORDED.

2) SITE PLAN FOR ISLAMIC SOCIETY OF SEACOAST AREA 686 MAPLEWOOD AVENUE PORTSMOUTH, N.H. SITE PLAN. PREPARED BY AMBIT ENGINEERING, INC. SCALE: 1"=30'. DATED MAY 2019. NOT RECORDED.

3) LAND BOUNDARY SURVEY PLAN DEPICTING LAND OWNED BY INDEPENDENT ORDER OF ODD FELLOWS, OSGOOD LODGE #48. PREPARED BY KNIGHT HILL LAND SURVEYING SERVICES, INC. SCALE: 1" = 40 FT. DATED OCT. 2003. RCRD D-31278.



"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

10-3-23

JOHN R. CHAGNON, LLS DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR NO. 738 JOHN R. CHAGNON SIGNATURE

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 220 AS LOT 90.

2) OWNERS OF RECORD:
ISLAMIC SOCIETY OF THE SEACOAST AREA
42N DOVER POINT ROAD
DOVER, NH 03820
5806/2816

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F. EFFECTIVE JANUARY 29, 2021.

4) EXISTING LOT AREA:
62,776 S.F.
1.4411 ACRES

5) PARCEL IS LOCATED IN SINGLE RESIDENCE B (SRB) DISTRICT.

DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:		15,000 S.F.
FRONTAGE:		100 FEET
SETBACKS:	FRONT	30 FEET
	SIDE	10 FEET
	REAR	30 FEET
MAXIMUM STRUCTURE HEIGHT:		35 FEET
MAXIMUM BUILDING COVERAGE:		20%
MINIMUM OPEN SPACE:		40%

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON ASSESSOR'S MAP 220 LOT 90 IN THE CITY OF PORTSMOUTH.

8) RCRD 5759/1160 PLACED A BURDEN ON TAX MAP 220 LOT 90. THE EASEMENT DESCRIBED IN RCRD 5759/1160 HAS BEEN EXTINGUISHED DUE TO THE REMOVAL OF THE DECKS AND THE NON-REPLACEMENT WITHIN THE SIX (6) MONTHS ALLOWED BY THE EASEMENT DEED.

RESIDENTIAL DEVELOPMENT
CHINBURG DEVELOPMENT
686 MAPLEWOOD AVE.
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	4/20/23
0	ISSUED FOR COMMENT	4/13/23

REVISIONS

SCALE: 1"=30' FEBRUARY 2023

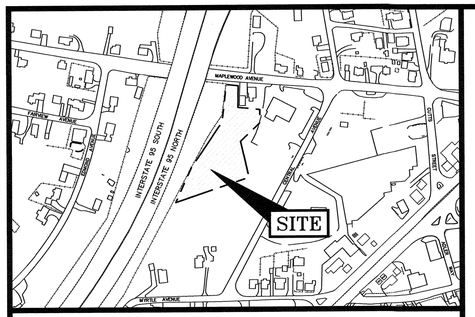
EXISTING CONDITIONS PLAN

C1

FB 394 PG 1

2360.01

P:\NHS\5010229-Chinburg, Builders\2360.01-686 Maplewood Ave., Portsmouth-JRC\2023 Site Plan\Plans & Specs\Site\2360 Site 2023.dwg, 10/2/2023 10:42:27 PM, Portsmouth Plotter Canon TX3000.pc3



LOCATION MAP SCALE 1"=300'

ABUTTERS:

209/07
N/F
OSGOOD LODGE NO. 48 ODDFELLOWS BLDG ASSOC.
P.O. BOX 1045
PORTSMOUTH, NH 03802
6354/1704

220/87-1
N/F
JEFFREY MATTSON &
KATHRYN MICHELE ARBOUR
86 EMERY STREET
PORTSMOUTH, NH 03801
6085/200

220/87-2
N/F
HAPPY MOUNTAIN HOLDINGS LLC
901 N MARKET ST SUITE 705
WILMINGTON, DE 19801
5905/2552

220/87-2-1
N/F
CARL & DEBORAH ROCHE
64 EMERY STREET, UNIT #1
PORTSMOUTH, NH 03801
6147/2870

220/87-2-2
N/F
BETTY J. SWANTON
64 EMERY STREET, UNIT #2
PORTSMOUTH, NH 03801
6121/2485

220/87-2-3
N/F
SUSAN ZIMMERMANN
48 NORTH STATE STREET
CONCORD, NH 03301
6184/111

220/87-2-4
N/F
JAIME PRIDHAM
74 EMERY STREET, UNIT #4
PORTSMOUTH, NH 03801
6142/69

220/87-3
N/F
HAPPY MOUNTAIN HOLDINGS LLC
901 N MARKET ST SUITE 705
WILMINGTON, DE 19801
5905/2552

220/88
N/F
650 MAPLEWOOD, LLC
3 CATE STREET
PORTSMOUTH, NH 03801
6367/690

220/89
N/F
TAYLOR B. & MEREDITH JACKSON
281 SAGAMORE AVENUE
PORTSMOUTH, NH 03801
5759/1163

LEGEND: SEE COVER SHEET

IMPERVIOUS SURFACE AREAS
(TO PROPERTY LINE)

STRUCTURE	PRE–CONSTRUCTION IMPERVIOUS (S.F.)	POST–CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURES	0	5,856
DECKS	0	1,248
COVERED PORCHES	0	270
PAVEMENT	0	11,790
SIDEWALKS	0	2,376
GRAVEL	12,999	0
CURBING	0	255
RETAINING WALL	0	477
TOTAL	12,999	22,272
LOT SIZE	62,776	62,776
% LOT COVERAGE	20.7%	35.5%

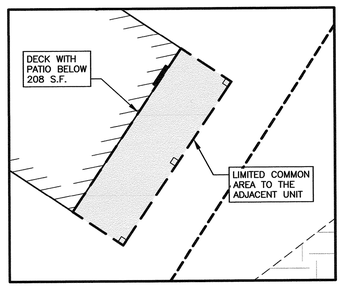
PROPOSED BUILDING COVERAGE: 7,374 S.F./62,776 S.F. = 11.7%
PROPOSED OPEN SPACE: 40,504 S.F./62,776 S.F. = 64.5%
BUILDING HEIGHT TO CONFORM TO ORDINANCE.

VARIANCES GRANTED:

1) ARTICLE #5, SECTION 10.520 TO PERMIT FRONTAGE OF 47.31 FEET WHERE 100 FEET IS REQUIRED. GRANTED 6/21/23.

2) ARTICLE #5, SECTION 10.520 TO PERMIT 10,462 S.F. OF LOT AREA PER DWELLING UNIT WHERE 15,000 S.F. OF LOT AREA PER DWELLING UNIT IS REQUIRED. GRANTED 8/22/23.

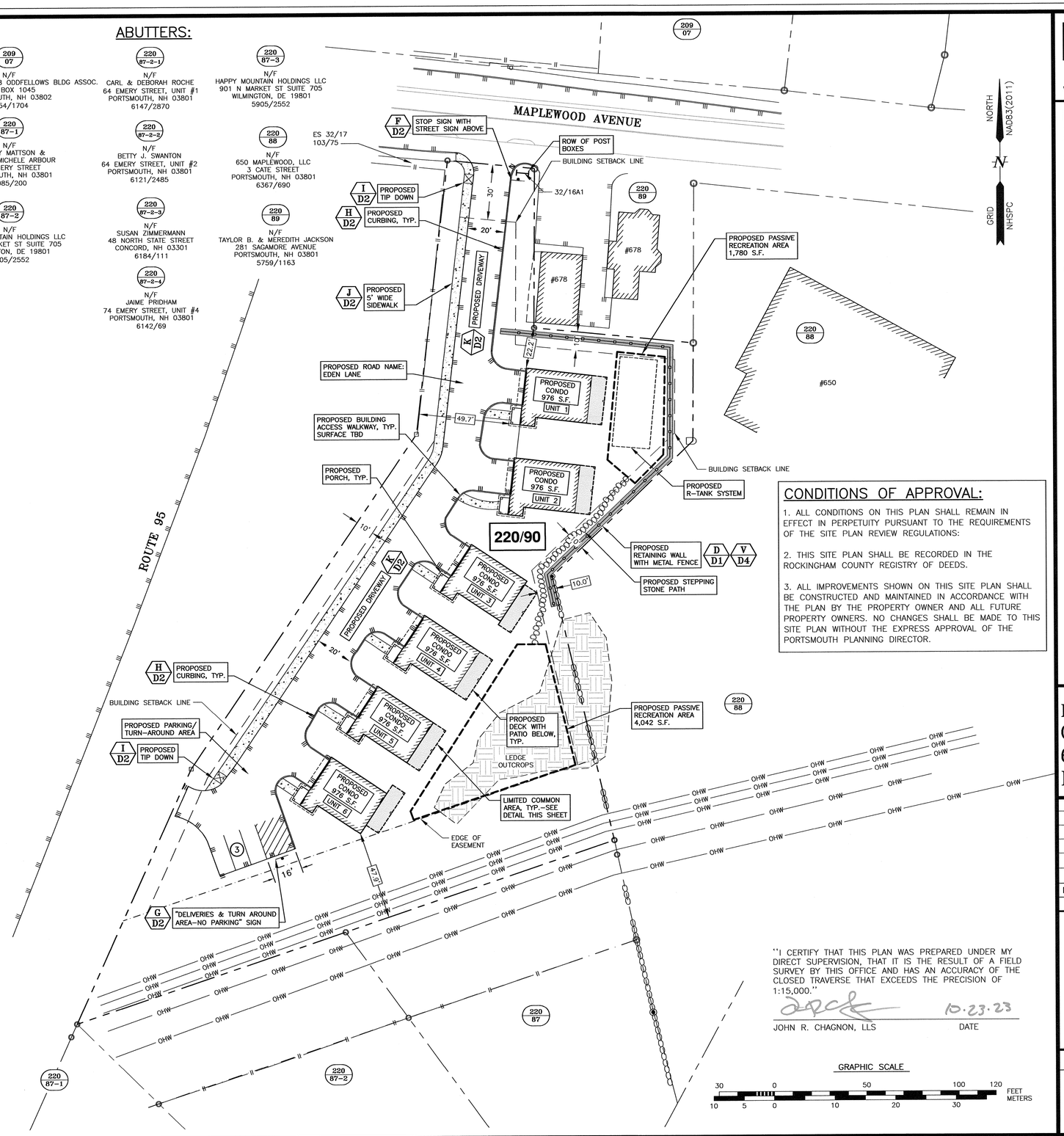
3) ARTICLE #5, SECTION 10.513 TO PERMIT 6 FREE STANDING BUILDINGS WITH DWELLINGS WHERE NO MORE THAN ONE FREE STANDING DWELLING IS PERMITTED. GRANTED 8/22/23.



LIMITED COMMON AREAS 1"=10'

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE



CONDITIONS OF APPROVAL:

1. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS:

2. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

3. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

10.23.23
JOHN R. CHAGNON, LLS DATE

GRAPHIC SCALE
30 0 50 100 120 FEET
10 5 0 10 20 30 METERS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 220 AS LOT 90.

2) OWNERS OF RECORD:
ISLAMIC SOCIETY OF THE SEACOAST AREA
42N DOVER POINT ROAD
DOVER, NH 03820
5806/2816

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F. EFFECTIVE JANUARY 29, 2021.

4) EXISTING LOT AREA:
62,776 S.F.
1.4411 ACRES

5) PARCEL IS LOCATED IN SINGLE RESIDENCE B (SRB) DISTRICT.

DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:		15,000 S.F.
FRONTAGE:		100 FEET
SETBACKS: FRONT	30 FEET	
SIDE	10 FEET	
REAR	30 FEET	
MAXIMUM STRUCTURE HEIGHT:		35 FEET
MAXIMUM BUILDING COVERAGE:		20%
MINIMUM OPEN SPACE:		40%

6) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED DEVELOPMENT ON ASSESSOR'S MAP 220 LOT 90 IN THE CITY OF PORTSMOUTH.

7) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GPS OBSERVATIONS.

8) BUILDINGS FROM PLANS BY CJ ARCHITECTS DATED 10–23–23.

9) PARKING CALCULATION:
REQUIRED: 1.3 PER UNIT
6 UNITS X 1.3 = 8 SPACES
GUEST REQUIRED: 1 PER 5 UNITS = 1 SPACE
TOTAL SPACES REQUIRED = 9
PROVIDED PARKING: 15 SPACES

10) UNIT NUMBERING TO BE COORDINATED WITH 911.

11) THE PLAN FOR SOLID WASTE REMOVAL IS TO PROVIDE PRIVATE WEEKLY PICKUP.

12) STORMWATER MANAGEMENT INSTALLATIONS SHALL BE INSPECTED BY DPW DURING CONSTRUCTION AND AN ANNUAL REPORT SHALL BE SUBMITTED TO THE DPW DEPARTMENT REGARDING THE FUNCTION OF THE DESIGN.

RESIDENTIAL DEVELOPMENT
CHINBURG DEVELOPMENT
686 MAPLEWOOD AVE.
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	10/23/23
0	ISSUED FOR COMMENT	10/3/23

REVISIONS

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 738 JOHN R. CHAGNON SIGNATURE

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7651 LICENSED PROFESSIONAL ENGINEER

SCALE: 1"=30' JULY 2023

SITE PLAN C2

FB 394 PG 1 2360.01

P:\NH\501020-Chinburg_Builders\2360.01-686 Maplewood Ave., Portsmouth-NC\2023 Site Plan\Plans & Specs\Sket2360 Site 2023.dwg, 10/23/2023 10:07:07 AM, Portsmouth Plotter Canon TX3000.pc3

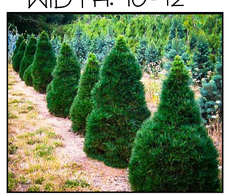
CALL BEFORE YOU DIG

811 DigSafe MA·ME·NH·RI·VT

Dig Safe System, Inc.
It's Smart. It's Free. It's the Law.

THUNDERHEAD BLACK PINE

HEIGHT: 10'-12'
WIDTH: 10'-12'



1" = 30'

N

PLANT LEGEND

Qty	Botanical Name	Common Name	Remarks
Trees			
39	PINUS thunbergiana 'Thunderhead'	Pine, Thunderhead Japanese Black	36" - 42"
7	Platanus x acerifolia 'Bloodgood'	BLOODGOOD LONDON PLANETREE	2" - 2.5" cal.
2	Prunus cerasifera 'Thundercloud'	THUNDERCLOUD CHERRY PLUM	2" - 2.5" cal.
Shrubs			
16	Spiraea japonica 'Shirobana'	SHIROBANA JAPANESE SPIREA	#3
Perennials			
28	Echinacea purpurea 'Kim's Knee High'	KIM'S KNEE HIGH PURPLE CONEFLOWER	#1

NOTES

SHEET SIZE
24"x32"

No.	Date	Description
1	07.25.23	COMMENTS
2	10.03.23	COMMENTS

REVISIONS

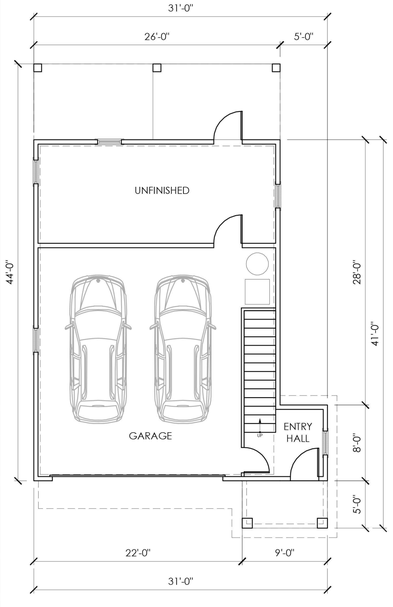
686 MAPLEWOOD CONCEPT PLAN LANDSCAPE

TRIMMERS LANDSCAPING, INC.

SCALE	1" = 30'
DRAWN BY	MIC
CHECKED BY	ES
DATE	10.03.23
DATE OF PRINT	

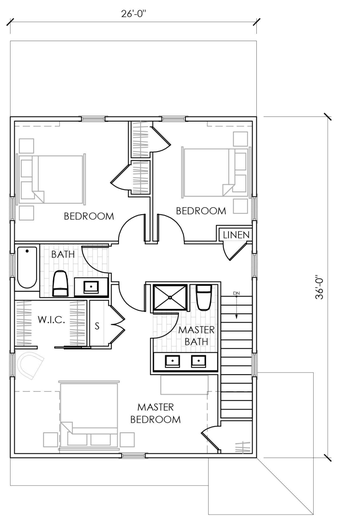
PROJECT NO.

SHEET NO. L-1



LOWER LEVEL PLAN
1/8" = 1'-0"

FIRST FLOOR PLAN
1/8" = 1'-0"



SECOND FLOOR PLAN
1/8" = 1'-0"

FRONT ELEVATION
1/8" = 1'-0"

RIGHT ELEVATION
1/8" = 1'-0"

BACK ELEVATION
1/8" = 1'-0"

LEFT ELEVATION
1/8" = 1'-0"

NOT FOR CONSTRUCTION

REVISIONS:

CHINBURG PROPERTIES, INC.
686 MAPLEWOOD AVENUE
PORTSMOUTH, NH

LICENSED ARCHITECT
CARLA J GOODKNIGHT
No. 1988
THE STATE OF NEW HAMPSHIRE

CJ ARCHITECTS
233 VAUGHAN STREET
SUITE 101
PORTSMOUTH, NH 03801
(603) 431-2808
www.cjarchitects.net

FLOOR PLANS & ELEVATIONS

DATE:	10/23/23
DRAWN BY:	RDL
APPROVED BY:	CJG
SCALE:	1/8" = 1'-0"
JOB NUMBER:	22303

A1

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
CB 1	PROP	37.0	12"		33.70	NW
CB 2	PROP	43.3	15"	37.28	37.03	W
CB 3	PROP	46.5	15"	42.00	41.90	E
CB 4	PROP	49.4	15"	46.00	45.75	NE
CB 5	PROP	55.1	12"	52.00	51.90	NE
CB 6	PROP	59.0	12"		55.00	NE
DMH 1	EX	37.1	15"	33.08		S
DMH 1	EX	37.1	12"	33.35		SE
DMH 2	PROP	43.4	15"	37.00	36.90	S
DMH 3	PROP	44.0	15"	37.45	37.45	W
DMH 4	PROP	44.5	15"	41.66	39.02	N

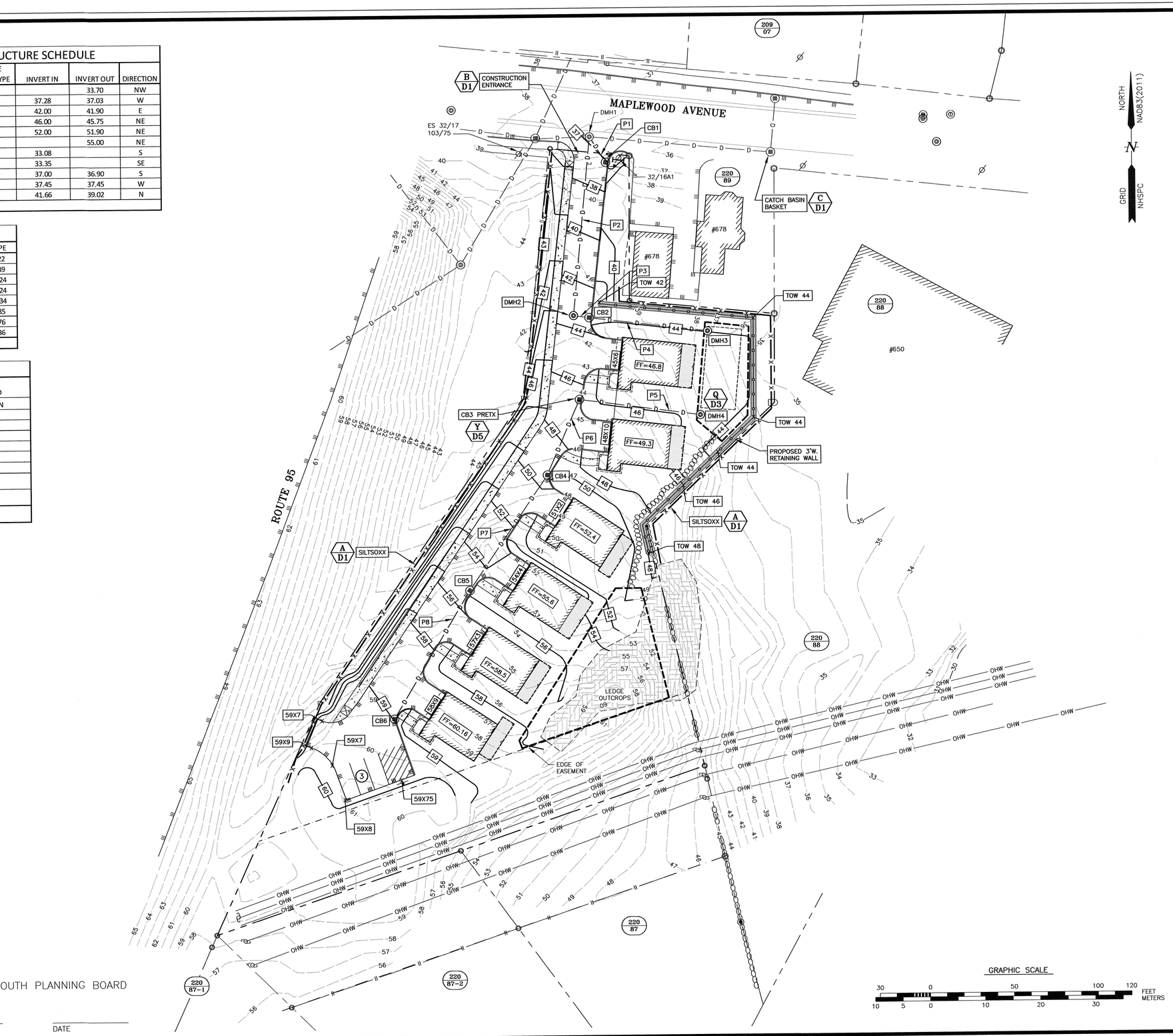
PIPE SCHEDULE

PIPE #	PIPE SIZE	LENGTH	SLOPE
P1	12"	16'	0.022
P2	15"	104'(91')	0.039
P3	15"	8'	0.0024
P4	15"	69'	0.0024
P5	15"	72'	0.0034
P6	15"	44'	0.085
P7	12"	78'	0.076
P8	12"	84'	0.036

*ALL PIPE TO BE HDPE

R-TANK SYSTEM

MODULE TYPE	R-TANK HD
TRAFFIC LOAD	PEDESTRIAN
# OF TANKS	680
TANK STORAGE	2805.6 cf
STONE STORAGE	1000.4 cf
TOTAL STORAGE	3805.9 cf
TOP OF COVER STONE	41.27
TOP OF R-TANK	40.27
BOTTOM OF TANK	37.45
STONE BASE INVERT	37.20
SYSTEM IS 26.31' WIDE BY 50.92' LONG	



APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) INSTALL CATCH BASIN INLET PROTECTION ON ALL EXISTING AND PROPOSED CATCH BASINS UNTIL CONSTRUCTION IS COMPLETED AND THE SITE IS STABILIZED.

RESIDENTIAL DEVELOPMENT
CHINBURG DEVELOPMENT
686 MAPLEWOOD AVE.
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	10/23/23
0	ISSUED FOR COMMENT	10/3/23

REVISIONS

JOHN R. CHAGNON No. 7651 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE: 1"=30' OCTOBER 2023

GRADING & EROSION CONTROL PLAN — **C3**

FB 394 PG 1

2360.01

P:\NH\2010\20-Chinburg, Builders\2360.01-686 Maplewood Ave, Portsmouth-JRC\2023 Site Plan\Plans & Specs\Site\2360 Site 2023.dwg, 10/23/2023 10:11:15 AM, Portsmouth Plotter Canon TX3000.pc3

UTILITY NOTES:

1) SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
2) COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY.
3) SEE GRADING AND DRAINAGE PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
4) ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, POLYWRAPPED, CEMENT LINED DUCTILE IRON PIPE.
5) ALL WATERMAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION AND BEFORE ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE WITH THE CITY OF PORTSMOUTH.
6) ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
7) ALL WORK WITHIN CITY R.O.W. SHALL BE COORDINATED WITH CITY OF PORTSMOUTH
8) CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
9) ANY CONNECTION TO EXISTING WATERMAIN SHALL BE CONSTRUCTED BY THE CITY OF PORTSMOUTH.
10) EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
11) ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
12) THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH BUILDING DRAWINGS AND UTILITY COMPANIES.
13) ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
14) ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
15) THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATED TO THE OWNER PRIOR TO THE COMPLETION OF PROJECT.
16) THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED IN THESE DRAWING TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
17) CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
18) A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS WATER ABOVE SEWER.
19) SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVED AREAS.
20) GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
21) COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
22) ALL SEWER PIPES WITH LESS THAN 6' COVER SHALL BE INSULATED.
23) CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
24) CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH UTILITY COMPANY AND AFFECTED ABUTTER.
25) SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER IN COORDINATION WITH THE SITE CIVIL ENGINEER.
26) CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.
27) THE CONTRACTOR SHALL INSTALL THE SEWER LINE AND MANHOLE IN CONSULTATION AND COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
28) BRASS WEDGES FOR CONTINUITY OF SIGNAL MUST BE INSTALLED ON WATER MAINS PER THE PORTSMOUTH WATER DEPARTMENT
29) FINAL REVIEW OF ALL UTILITIES SHALL BE MADE DURING THE REQUIRED SEWER CONNECTION PERMIT PROCESS IN COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
30) ALL WORK PERFORMED IN THE PUBLIC RIGHT-OF-WAY SHALL BE BUILT TO DEPARTMENT OF PUBLIC WATER WORKS STANDARDS.
31) THIRD PARTY UTILITY INSTALLATION INSPECTIONS SHALL BE REQUIRED ON WATER MAIN, SEWER, AND DRAINAGE SYSTEM CONSTRUCTION, AS WELL AS CONSTRUCTION AND REPAIRS TO CITY STREETS.

SEWER STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
SMH 1	EX					
SMH 2	EX					
SMH 3	EX					
SMH 4	PROP			32.31	32.21	E
SMH 5	PROP	44.0	8" PVC	34.73	34.63	N
SMH 6	PROP	47.4	8" PVC	39.83	39.73	N
SMH 7	PROP	59.1	8" PVC		52.1	NE

ALL SEWER PIPE TO BE SDR 35

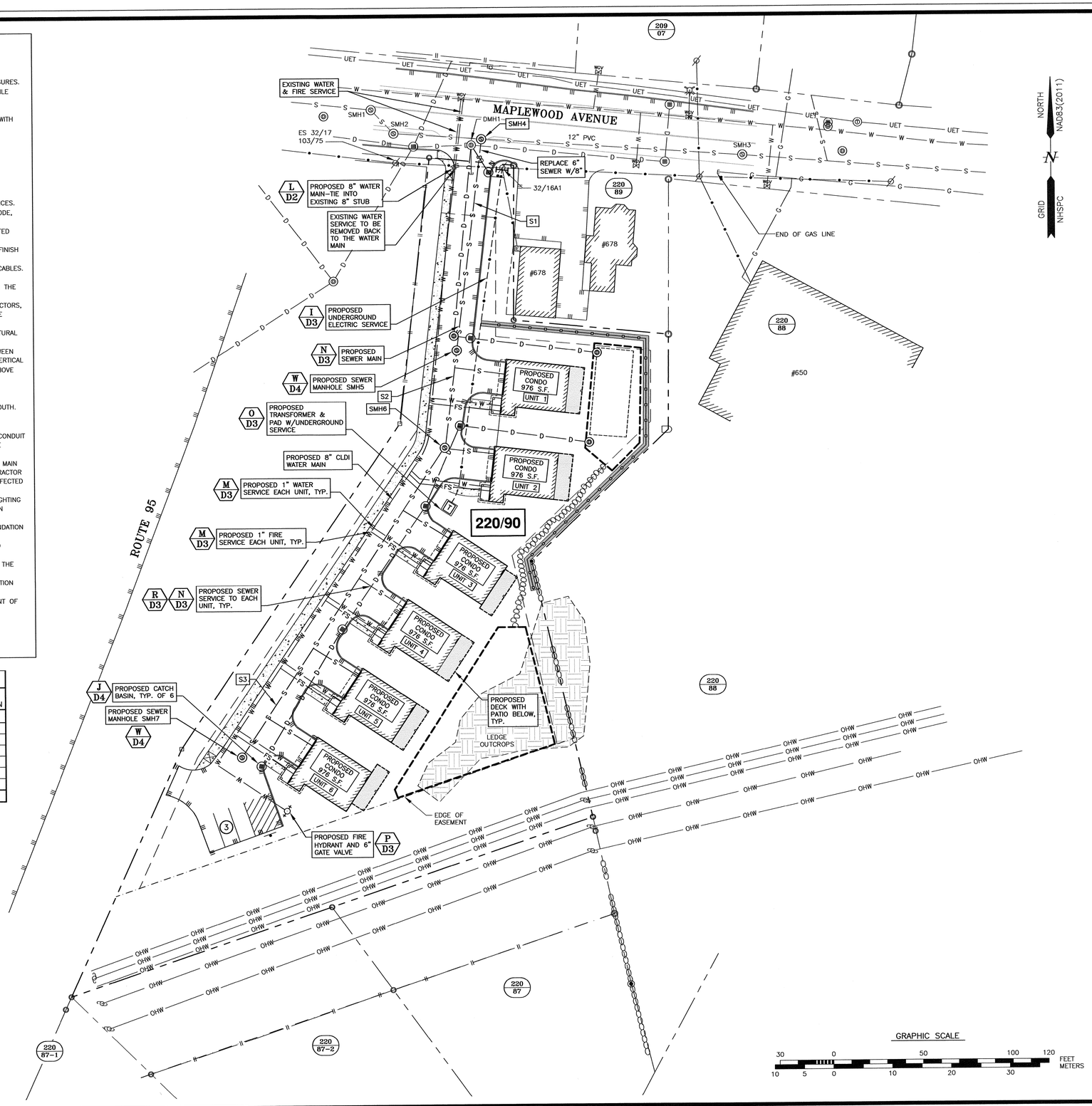
SEWER PIPE SCHEDULE

UNIT #	INV. @ MAIN	INV. @ BLDG.
1	35.13	41.6
2	40.07	44.1
3	42.23	47.2
4	44.75	50.4
5	47.63	53.3
6	50.39	54.9
PIPE	LENGTH	SLOPE
S1	116'	0.02
S2	50'	0.10
S3	202'	0.06

ALL SEWER PIPE TO BE SDR 35-8" MAIN, 6" SERVICES

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____



AMBIT ENGINEERING, INC.
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200 Griffin Road, Unit 3
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603.430.9282
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NOTES:

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3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) INSTALL CATCH BASIN INLET PROTECTION ON ALL EXISTING AND PROPOSED CATCH BASINS UNTIL CONSTRUCTION IS COMPLETED AND THE SITE IS STABILIZED.

5) ALL WATER MAIN AND SANITARY SEWER WORK SHALL MEET THE STANDARDS OF THE NEW HAMPSHIRE STATE PLUMBING CODE AND CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.

6) UTILITY AS-BUILTS SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS UPON COMPLETION OF THE PROJECT.

7) BUILDINGS WILL BE SPRINKLED PER REQUIRED CODES.

8) EVERSOURCE WORK ORDER NUMBER: 14984794.

RESIDENTIAL DEVELOPMENT
CHINBURG DEVELOPMENT
686 MAPLEWOOD AVE.
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	10/23/23
0	ISSUED FOR COMMENT	10/3/23

REVISIONS

JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

SCALE: 1"=30' OCTOBER 2023

UTILITY PLAN

C4

FB 394 PG 1

2360.01

P:\NH\2010\2020-Chinburg_Builders\2360.01-696 Maplewood Ave., Portsmouth-INC\2023 Site Plan\Plans & Specs\Site\2360 Site 2023.dwg, 10/23/2023 11:50:49 AM, Portsmouth Potter Canon TX3000.pc3

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

IF REQUIRED THE CONTRACTOR SHALL OBTAIN AN **NPDES** PHASE II STORMWATER PERMIT AND SUBMIT A NOTICE OF INTENT (N.O.I.) BEFORE BEGINNING CONSTRUCTION AND SHALL HAVE ON SITE A STORMWATER POLLUTION PREVENTION PLAN (**S.W.P.P.P.**) AVAILABLE FOR INSPECTION BY THE PERMITTING AUTHORITY DURING THE CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT THE **S.W.P.P.P.** AND INSPECTING AND MAINTAINING ALL BMP'S CALLED FOR BY THE PLAN. THE CONTRACTOR SHALL SUBMIT A NOTICE OF TERMINATION (**N.O.T.**) FORM TO THE REGIONAL EPA OFFICE WITHIN 30 DAYS OF FINAL STABILIZATION OF THE ENTIRE SITE OR TURNING OVER CONTROL OF THE SITE TO ANOTHER OPERATOR.

THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT:
1. OBSERVATIONS OF THE PROJECT FOR COMPLIANCE WITH THE SWPPP SHALL BE MADE BY THE CONTRACTOR AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A STORM 0.25 INCHES OR GREATER;
2. AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR;
3. A REPRESENTATIVE OF THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES;
4. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.

INSTALL PERIMETER CONTROLS, i.e., SILTSOXX AND CATCH BASIN PROTECTION AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAYBALES IS NOT ALLOWED.

THE CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE(S) PRIOR TO ANY EXCAVATION ACTIVITIES.

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED. DEMOLISH BUILDINGS AND FENCES AS NEEDED. REMOVE WALL AND STORE.

CONSTRUCT TEMPORARY FILTRATION BASINS AND OUTLET.

ROUGH GRADE SITE.

CONSTRUCT ROADWAY AND DRAINAGE SYSTEM.

LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES UP TO 10' OF THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

CONSTRUCT BUILDING FOUNDATIONS – BEGIN CONSTRUCTION.

CONNECT UTILITIES.

PLACE BINDER LAYER OF PAVEMENT FOR SIDEWALKS.

PLANT LANDSCAPING IN AREAS OUT OF WAY OF BUILDING CONSTRUCTION. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER.

AFTER BUILDINGS ARE COMPLETED, FINISH ALL REMAINING LANDSCAPED WORK.

CONSTRUCT SIDEWALKS AND ASPHALT WEARING COURSE.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF SIX SINGLE FAMILY HOUSES WITH ASSOCIATED PARKING AND UTILITES.

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 1.050 ACRES.

BASED ON THE USCS WEB SOIL SURVEY THE SOILS ON SITE CONSIST OF URBAN LAND–CANTON COMPLEX, 3–15% SLOPES WHICH IS WELL DRAINED SOILS WITH A HYDROLOGIC SOIL GROUP RATING OF A.

THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED VIA A CLOSED DRAINAGE SYSTEM TO THE CITY OF PORTSMOUTH CLOSED DRAINAGE SYSTEM WHICH ULTIMATELY FLOWS TO THE NORTH MILL POND THEN TO THE PISCATAQUA RIVER.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR MORE THAN 45 DAYS.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

DUST CONTROL: DUST CONTROL MEASURES SHALL INCLUDE BUT ARE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.
IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL NON–STRUCTURAL, SITE–FILL SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL, TRASH, WOODY DEBRIS, LEAVES, BRUSH OR ANY DELETERIOUS MATTER SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DURING CONSTRUCTION AND UNTIL ALL DEVELOPED AREAS ARE FULLY STABILIZED, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH ONE HALF INCH OF RAINFALL.

THE CONTRACTOR SHALL MODIFY OR ADD EROSION CONTROL MEASURES AS NECESSARY TO ACCOMMODATE PROJECT CONSTRUCTION.

ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED ON AREAS TO BE PAVED
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3 INCHES OF NON–EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
- EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.
- IN AREAS TO BE PAVED, "STABLE" MEANS THAT BASE COURSE GRAVELS MEETING THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2 HAVE BEEN INSTALLED.

STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS, WHERE CONSTRUCTION ACTIVITY SHALL NOT OCCUR FOR MORE THAN TWENTY–ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA.

STABILIZATION MEASURES TO BE USED INCLUDE:
- TEMPORARY SEEDING;
- MULCHING.

1. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
2. WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF NEARBY SURFACE WATERS OR DELINEATED WETLANDS, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN THESE AREAS, SILTSOXX, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
3. DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILTSOXX, MULCH BERMS, HAY BALE BARRIERS, OR SILT SOCKS. ALL STORM DRAIN BASIN INLETS SHALL BE PROVIDED WITH FLARED END SECTIONS AND TRASH RACKS. THE SITE SHALL BE STABILIZED FOR THE WINTER BY OCTOBER 15.

MAINTENANCE AND PROTECTION

THE SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

SILTSOXX SHALL BE REMOVED ONCE SITE IS STABILIZED, AND DISTURBED AREAS RESULTING FROM SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

THE CATCH BASIN INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.
SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATED GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;

AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT;

STOCKPILES

1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CATCH BASINS, SWALES, AND CULVERTS.
2. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
3. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
4. PROTECT ALL STOCKPILES FROM STORMWATER RUN–OFF USING TEMPORARY EROSION CONTROL MEASURES SUCH AS BERMS, SILT SOCK, OR OTHER APPROVED PRACTICE TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.

CONCRETE WASHOUT AREA

THE FOLLOWING ARE THE ONLY NON–STORMWATER DISCHARGES ALLOWED. ALL OTHER NON–STORMWATER DISCHARGES ARE PROHIBITED ON SITE:
1. THE CONCRETE DELIVERY TRUCKS SHALL, WHENEVER POSSIBLE, USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FAILITY;
2. IF IT IS NECESSARY, SITE CONTRACTOR SHALL DESIGNATE SPECIFIC WASHOUT AREAS AND DESIGN FACILITIES TO HANDLE ANTICIPATED WASHOUT WATER;
3. CONTRACTOR SHALL LOCATE WASHOUT AREAS AT LEAST 150 FEET AWAY FROM STORM DRAINS, SWALES AND SURFACE WATERS OR DELINEATED WETLANDS;
4. INSPECT WASHOUT FACILITIES DAILY TO DETECT LEAKS OR TEARS AND TO IDENTIFY WHEN MATERIALS NEED TO BE REMOVED.

ALLOWABLE NON–STORMWATER DISCHARGES

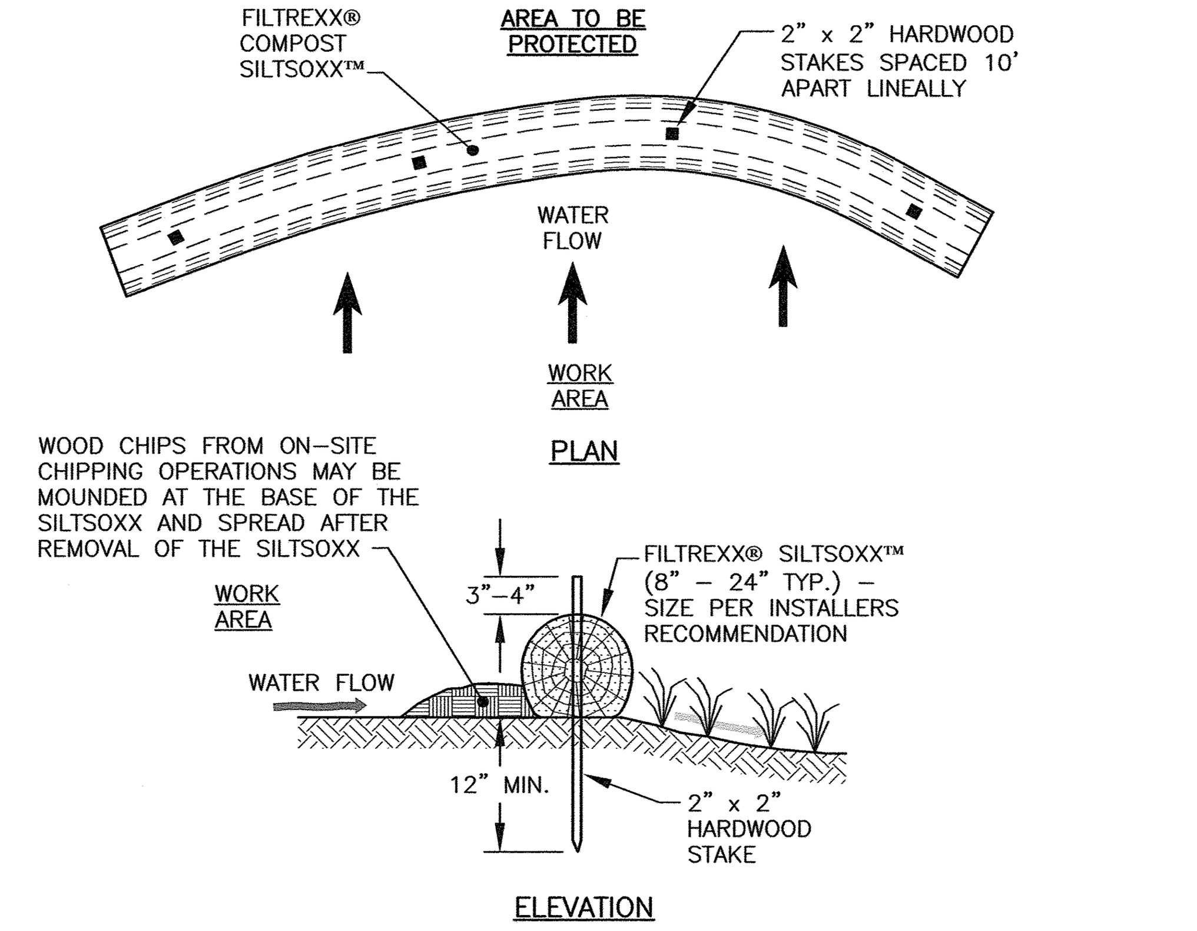
1. FIRE–FIGHTING ACTIVITIES;
2. FIRE HYDRANT FLUSHING;
3. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED;
4. WATER USED TO CONTROL DUST;
5. POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHING;
6. ROUTINE EXTERNAL BUILDING WASH DOWN WHERE DETERGENTS ARE NOT USED;
7. PAVEMENT WASH WATERS WHERE DETERGENTS ARE NOT USED;
8. UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATION;
9. UNCONTAMINATED GROUND WATER OR SPRING WATER;
10. FOUNDATION OR FOOTING DRAINS WHICH ARE UNCONTAMINATED;
11. UNCONTAMINATED EXCAVATION DEWATERING;
12. LANDSCAPE IRRIGATION.

WASTE DISPOSAL

1. WASTE MATERIAL
   - ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER;
   - NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE;
   - ALL PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
2. HAZARDOUS WASTE
   - ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER;
   - SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
3. SANITARY WASTE
   - ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

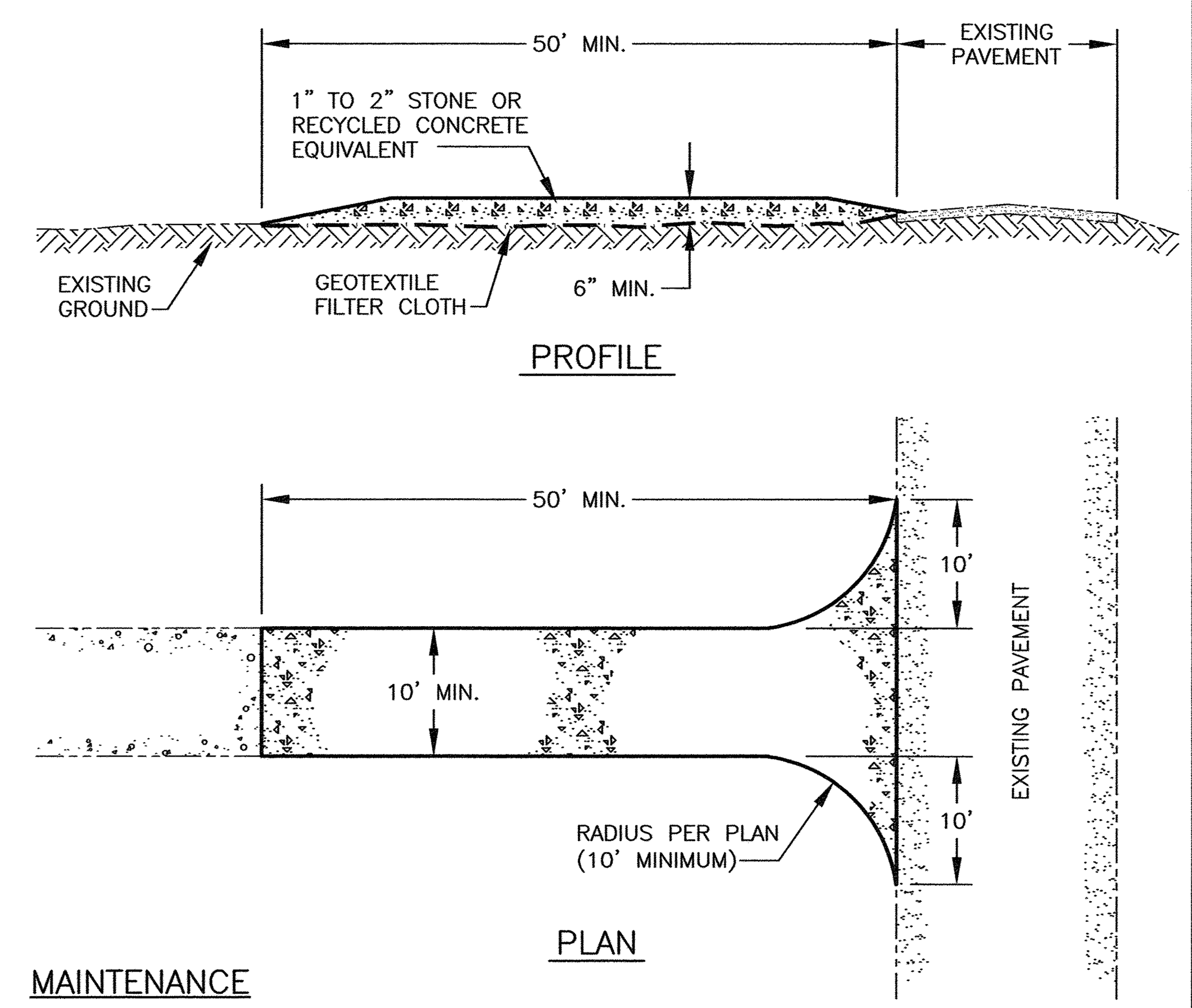
BLASTING NOTES

1. CONTRACTOR SHALL CONTACT THE NHDES AND/OR LOCAL JURISDICTION PRIOR TO COMMENCING ANY BLASTING ACTIVITIES.
2. FOR ANY PROJECT FOR WHICH BLASTING OF BEDROCK IS ANTICIPATED, THE APPLICANT SHALL SUBMIT A BLASTING PLAN THAT IDENTIFIES:
   - WHERE THE BLASTING ACTIVITIES ARE ANTICIPATED TO OCCUR;
   - THE ESTIMATED QUANTITY OF BLAST ROCK IN CUBIC YARDS; AND
   - SITE–SPECIFIC BLASTING BEST MANAGEMENT PRACTICES.



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

A / C3 FILTREXX® SILTSOXX™ FILTRATION SYSTEM
NTS



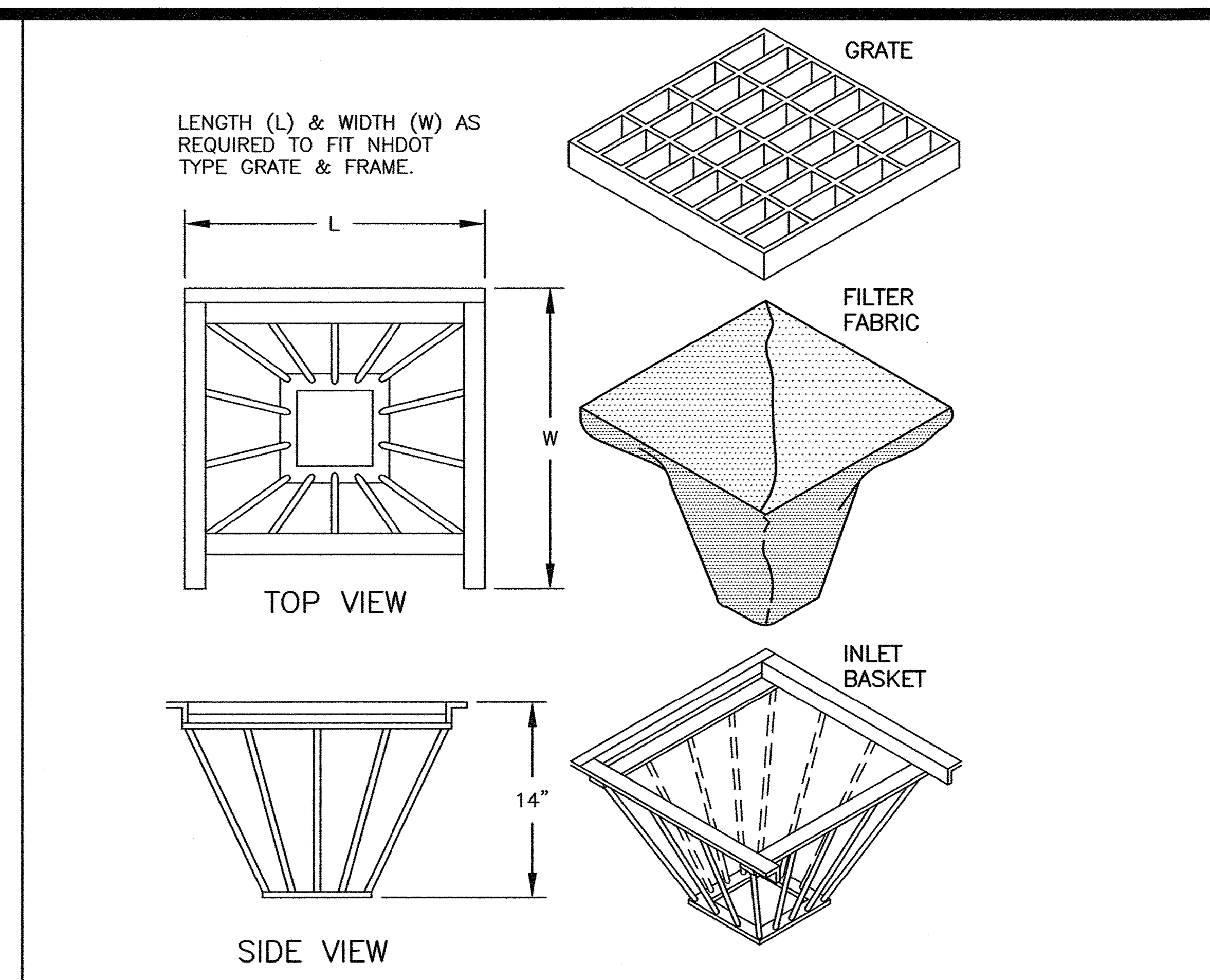
MAINTENANCE

1) MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
2) IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

1) STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3) THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4) THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
5) GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6) ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT–OF–WAY MUST BE REMOVED PROMPTLY.
8) WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

B / C3 STABILIZED CONSTRUCTION ENTRANCE
NTS



1) INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

2) FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND, SHALL EXTEND AT LEAST 6" PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.

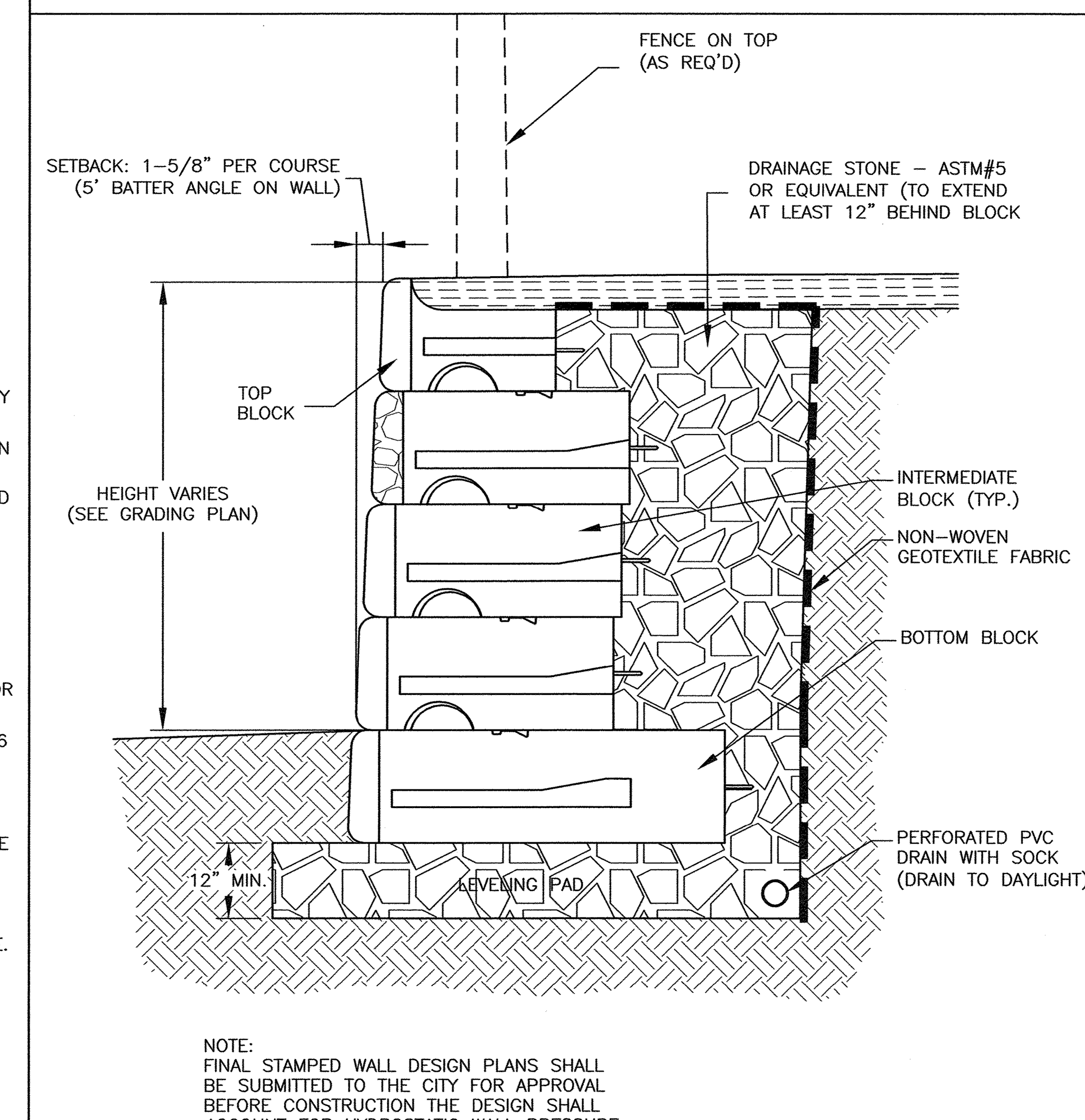
3) THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
–RAB STRENGTH: 45 LB. MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
–MULLEN BURST STRENGTH: MIN. 60 psi (ASTM D774)

4) THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 gpm/s.f. (MULTIPLY THE PERMITTIVITY IN SEC.–1 FROM ASTM 54491–85 CONSTANT HEAD TEST USING THE CONVERSION FACTOR OF 74.)

5) THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.

6) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

C / C3 CATCH BASIN INLET BASKET
NTS



NOTE:
FINAL STAMPED WALL DESIGN PLANS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL BEFORE CONSTRUCTION THE DESIGN SHALL ACCOUNT FOR HYDROSTATIC WALL PRESSURE.

D / C2 BLOCK GRAVITY WALL DETAIL
28" REDI ROCK WALL (OR APPROVED EQUAL)
NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

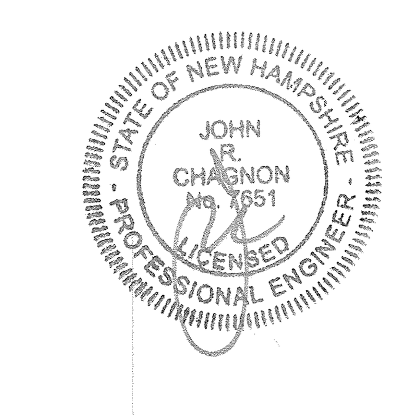
2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

RESIDENTIAL DEVELOPMENT
CHINBURG DEVELOPMENT
686 MAPLEWOOD AVE.
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	10/3/23

REVISIONS



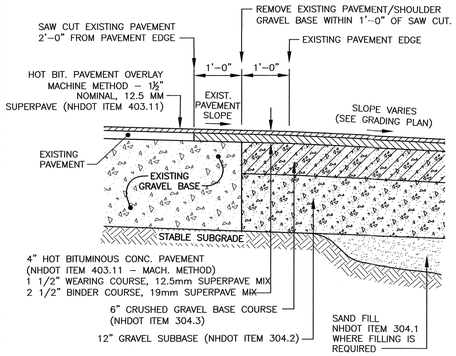
SCALE AS NOTED OCTOBER 2023

EROSION CONTROL NOTES & DETAILS

D1

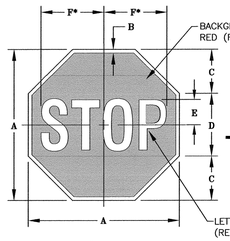
FB 394 PG 1

2360.01



E C2 FULL DEPTH PAVEMENT SECTION AND PAVEMENT JOINT DETAIL

NTS



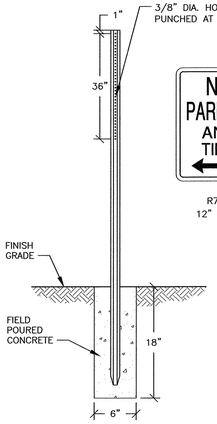
SIGN	DIMENSIONS (Inches)				
	A	B	C	D	E
BICYCLE	18	3/8	6	6C	7¾
MINIMUM	24	5/8	8	8C	10
STD.	30	¾	10	10C	12½
EXPWY.	36	⅞	12	12C	15
SPECIAL	48	1¼	16	16C	20

*REDUCE SPACING 40%

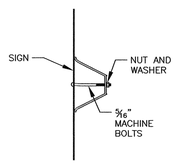
R1–1
A" x A"

F C2 STOP SIGN DETAIL

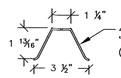
NTS



POST



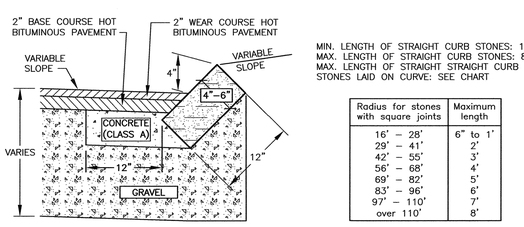
MOUNTING



POST SECTION

G C2 SIGN & POST DETAIL

NTS

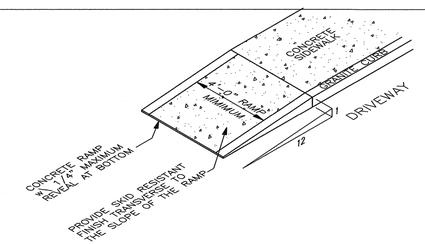


MIN. LENGTH OF STRAIGHT CURB STONES: 18"
MAX. LENGTH OF STRAIGHT CURB STONES: 8FT
MAX. LENGTH OF STRAIGHT STRAIGHT CURB STONES LAID ON CURVE: SEE CHART

Radius for stones with square joints	Maximum length
16' – 28'	6" to 1'
29' – 41'	2'
42' – 55'	3'
56' – 68'	4'
69' – 82'	5'
83' – 96'	6'
97' – 110'	7'
over 110'	8'

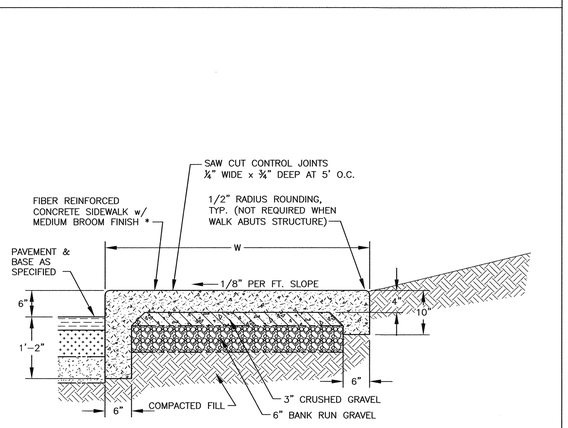
H C2 SLOPED GRANITE CURBING DETAILS

NTS



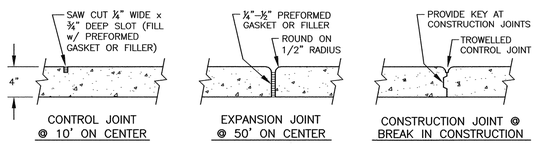
I C2 TYPICAL SIDEWALK TIP DOWN

NTS



*FIBER: 100% VIRGIN POLYPROPYLENE SUCH AS GRACE MICROFIBER, ASTM C1116, TYPE 111, PAR.4.1.3 OR EQUAL. APPLIED @ 1 LB. PER C.Y.

CROSS SECTION



CONTROL JOINT @ 10' ON CENTER

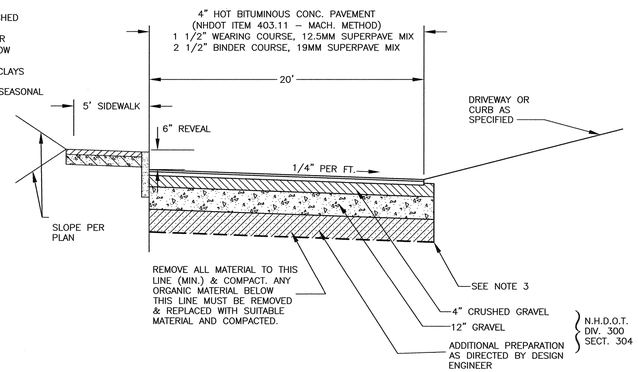
EXPANSION JOINT @ 50' ON CENTER

CONSTRUCTION JOINT @ BREAK IN CONSTRUCTION

J C2 CONCRETE WALK w/ CONCRETE CURB

NTS

NOTES:
1) REMOVE LEDGE TO 18" BELOW FINISHED SURFACE.
2) REMOVE CLAY, LOAM AND ANY OTHER UNSUITABLE MATERIALS TO 20" BELOW FINISHED SURFACE.
3) INSTALL GEOTEXTILE FABRIC ABOVE CLAYS AND SILTS OR IN AREAS WHERE EXCAVATION IS BELOW THE SEASONAL HIGH WATER TABLE.



K C2 TYPICAL DRIVEWAY SECTION

NTS

HORIZONTAL ANCHOR DIMENSIONS FOR PIPE INSTALLATION IN ROCK

UP TO 150 P.S.I. WORKING PRESSURE

PIPE SIZE	TEE OR TAP SLEEVE		90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	H	L	H	L	H	L	H	L	H	L
* 4"	0'–9"	1'–0"	0'–9"	1'–0"	0'–9"	1'–0"	0'–9"	1'–0"	0'–9"	1'–0"
6"	0'–9"	1'–0"	0'–9"	1'–0"	0'–9"	1'–0"	0'–9"	1'–0"	0'–9"	1'–0"
8"	1'–2"	1'–2"	1'–2"	1'–2"	1'–0"	1'–0"	0'–9"	1'–0"	0'–9"	1'–0"
10"	1'–4"	1'–4"	1'–4"	1'–4"	1'–0"	1'–0"	0'–9"	1'–0"	0'–9"	1'–0'
12"	1'–8"	1'–8"	1'–8"	1'–8"	1'–3"	1'–0"	1'–0"	1'–0"	0'–9"	1'–0"

* – FOR 3" AND SMALLER PIPES

HORIZONTAL ANCHOR DIMENSIONS FOR AVERAGE SOIL CONDITIONS

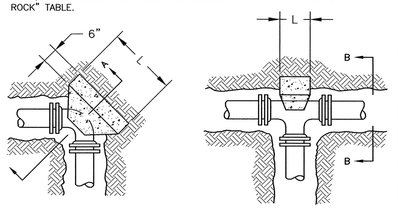
UP TO 150 P.S.I. WORKING PRESSURE

PIPE SIZE	TEE OR TAP SLEEVE		90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	H	L	H	L	H	L	H	L	H	L
* 4"	1'–0"	2'–0"	1'–0"	2'–0"	1'–0"	1'–4"	0'–9"	1'–0"	0'–6"	1'–0"
6"	1'–0"	2'–0"	1'–0"	2'–0"	1'–0"	1'–4"	0'–9"	1'–0"	0'–6"	1'–0"
8"	1'–4"	2'–8"	1'–4"	2'–8"	1'–4"	1'–6"	1'–0"	1'–0"	0'–9"	1'–0"
10"	1'–8"	3'–4"	1'–8"	3'–4"	1'–8"	2'–0"	1'–3"	1'–3"	1'–0"	1'–0'
12"	2'–0"	4'–0"	2'–0"	4'–0"	2'–0"	2'–2"	1'–6"	1'–6"	1'–3"	1'–3"

* – FOR 3" AND SMALLER PIPES

NOTES:
1) TABLES ARE BASED ON AN ALLOWABLE SOIL PRESSURE OF 3000 PSF ON UNDISTURBED EARTH BEHIND THE ANCHOR BLOCK. WHERE SOIL HAS BEEN DISTURBED BY ADJACENT EXCAVATIONS OR WHERE SOIL CANNOT WITHSTAND SUCH A PRESSURE, THE TABLE DOES NOT APPLY.

2) WHERE ENTIRE DEPTH OF PIPE IS BELOW THE TOP SURFACE OF SOUND ROCK, USE "HORIZONTAL ANCHOR DIMENSIONS FOR PIPE INSTALLATION IN ROCK" TABLE.

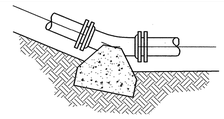


HORIZONTAL ANCHORING

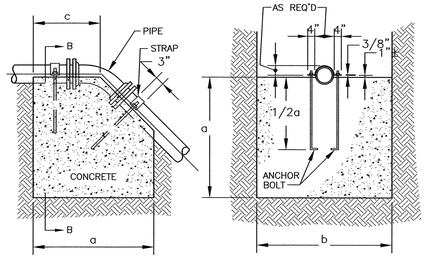
VERTICAL ANCHOR DIMENSIONS

UP TO 150 P.S.I. WORKING PRESSURE

PIPE SIZE	45° BEND				22 1/2° BEND				11 1/4° BEND			
	DIMENSION			ROD DIA.	DIMENSION			ROD DIA.	DIMENSION			ROD DIA.
	a	b	c		a	b	c		a	b	c	
4"	3'–0"	3'–0"	2'–0"	3/4"	2'–6"	2'–3"	1'–6"	3/4"	2'–0"	2'–0"	1'–6"	3/4"
6"	3'–0"	3'–0"	2'–0"	3/4"	2'–6"	2'–3"	1'–6"	3/4"	2'–0"	2'–0"	1'–6"	3/4"
8"	3'–6"	3'–6"	2'–6"	3/4"	3'–0"	3'–0"	1'–9"	3/4"	2'–6"	2'–6"	1'–3"	3/4"
10"	4'–3"	4'–0"	3'–0"	3/4"	3'–6"	3'–3"	2'–0"	3/4"	2'–9"	2'–9"	1'–6"	3/4"
12"	4'–9"	4'–6"	3'–3"	3/4"	4'–0"	3'–9"	2'–6"	3/4"	3'–3"	3'–3"	1'–9"	3/4"

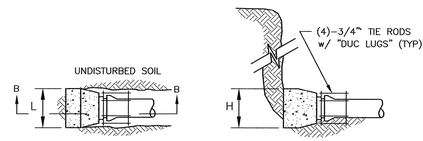


USE SAME DIMENSIONS AS FOR HORIZONTAL BEND ANCHORS



VERTICAL BEND

ALL EXPOSED PORTIONS OF ANCHOR STRAPS TO RECEIVE TWO FIELD COATS (MIN.) OF BITUMASTIC MATERIAL



RESTRAINED PLUG OR CAP

NOTE: SEE CHART "HORIZONTAL ANCHOR DIMENSIONS"
TIE RODS TO BE PROVIDED IN LIEU OF THRUST BLOCK

VERTICAL ANCHORING

L C4 PRESSURE PIPE ANCHORING DETAILS

INSTALL PER PORTSMOUTH REQUIREMENTS NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

RESIDENTIAL DEVELOPMENT
CHINBURG DEVELOPMENT
686 MAPLEWOOD AVE.
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	10/3/23

REVISIONS

STATE OF NEW HAMPSHIRE – JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

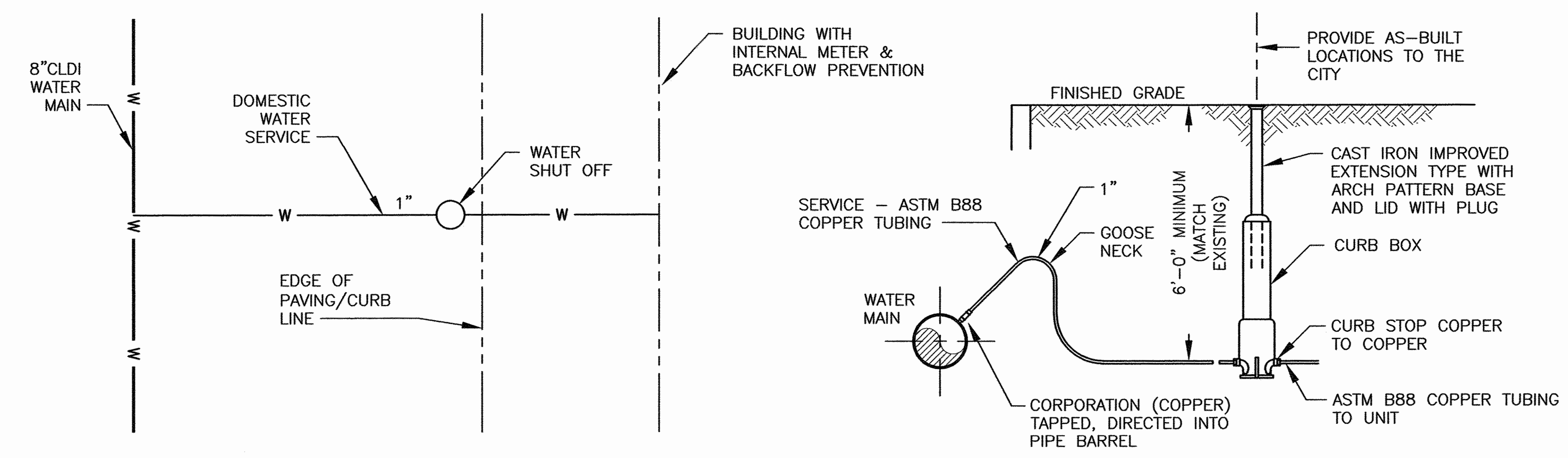
SCALE AS NOTED

OCTOBER 2023

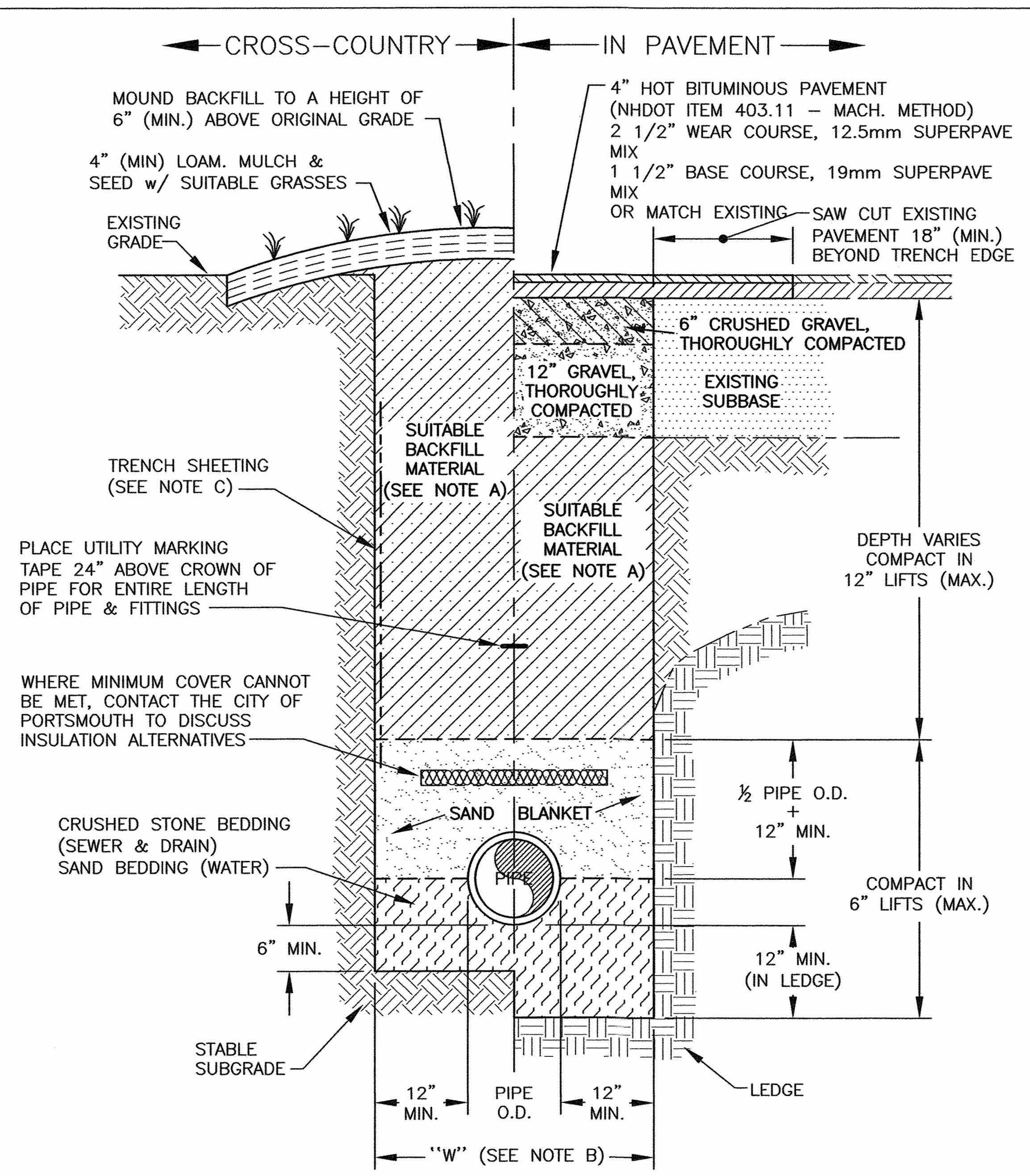
DETAILS

D2

2360



M / C4 TYPICAL WATER SERVICE CONNECTION
NTS



TRENCH NOTES:

A) TRENCH BACKFILL:
- IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.

- IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE.

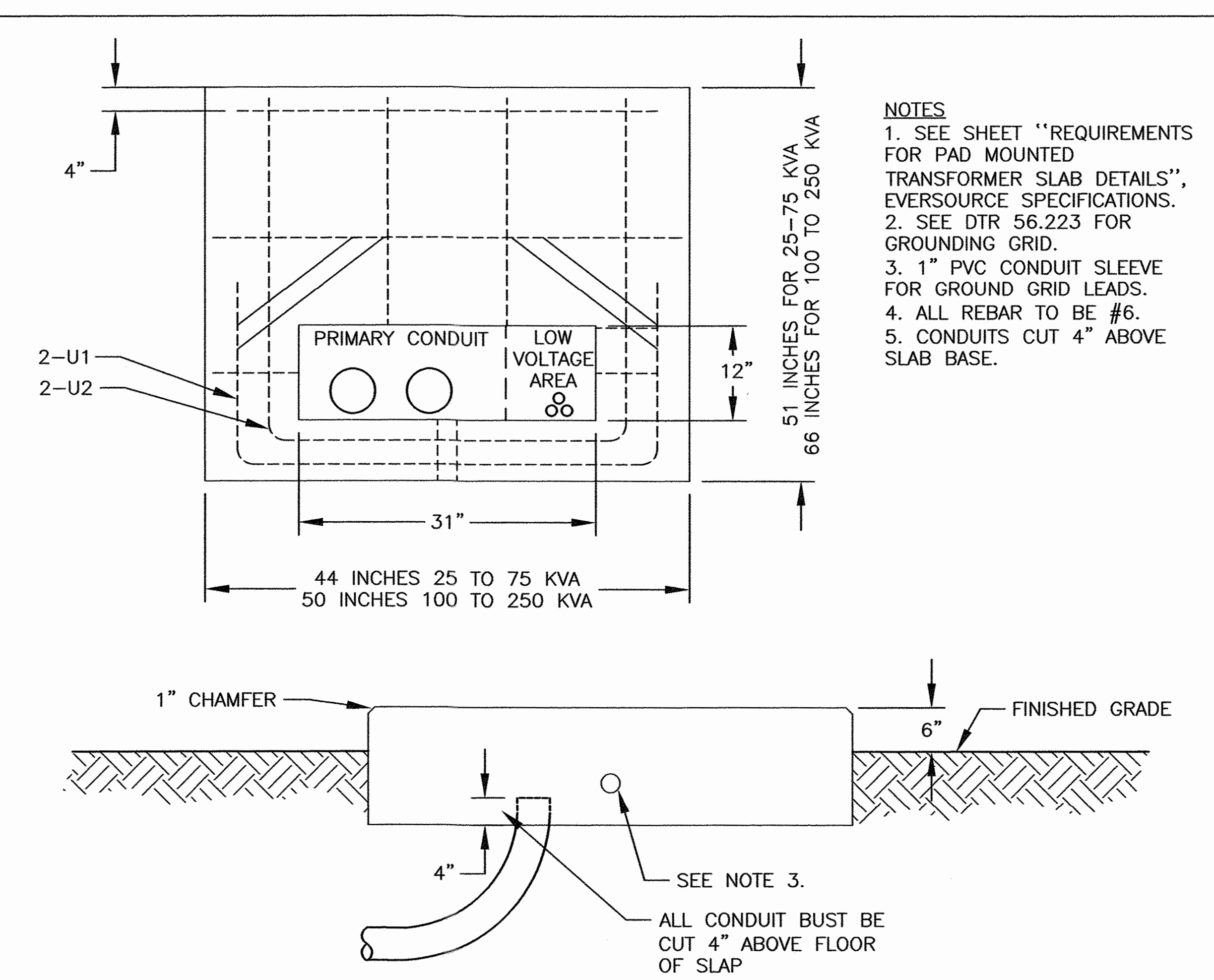
B) "W" = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D..

C) TRENCH SHEETING:
IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS GOVERNED BY OTHER CODES):
6' MINIMUM FOR SEWER (IN PAVEMENT)
4' MINIMUM FOR SEWER (CROSS COUNTRY)
3' MINIMUM FOR STORMWATER DRAINS
5' MINIMUM FOR WATER MAINS

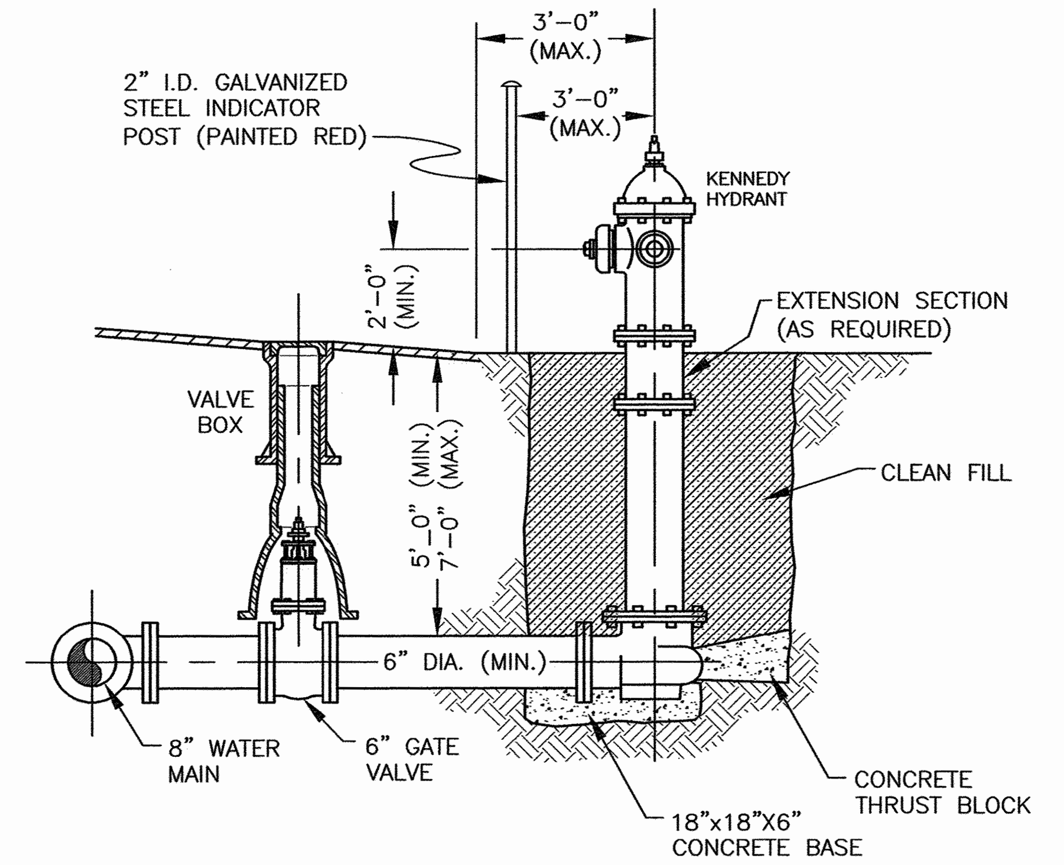
E) ALL PAVEMENT CUTS SHALL BE REPAIRED BY THE INFRARED HEAT METHOD.

N / C4 TYPICAL PIPE TRENCH
NTS



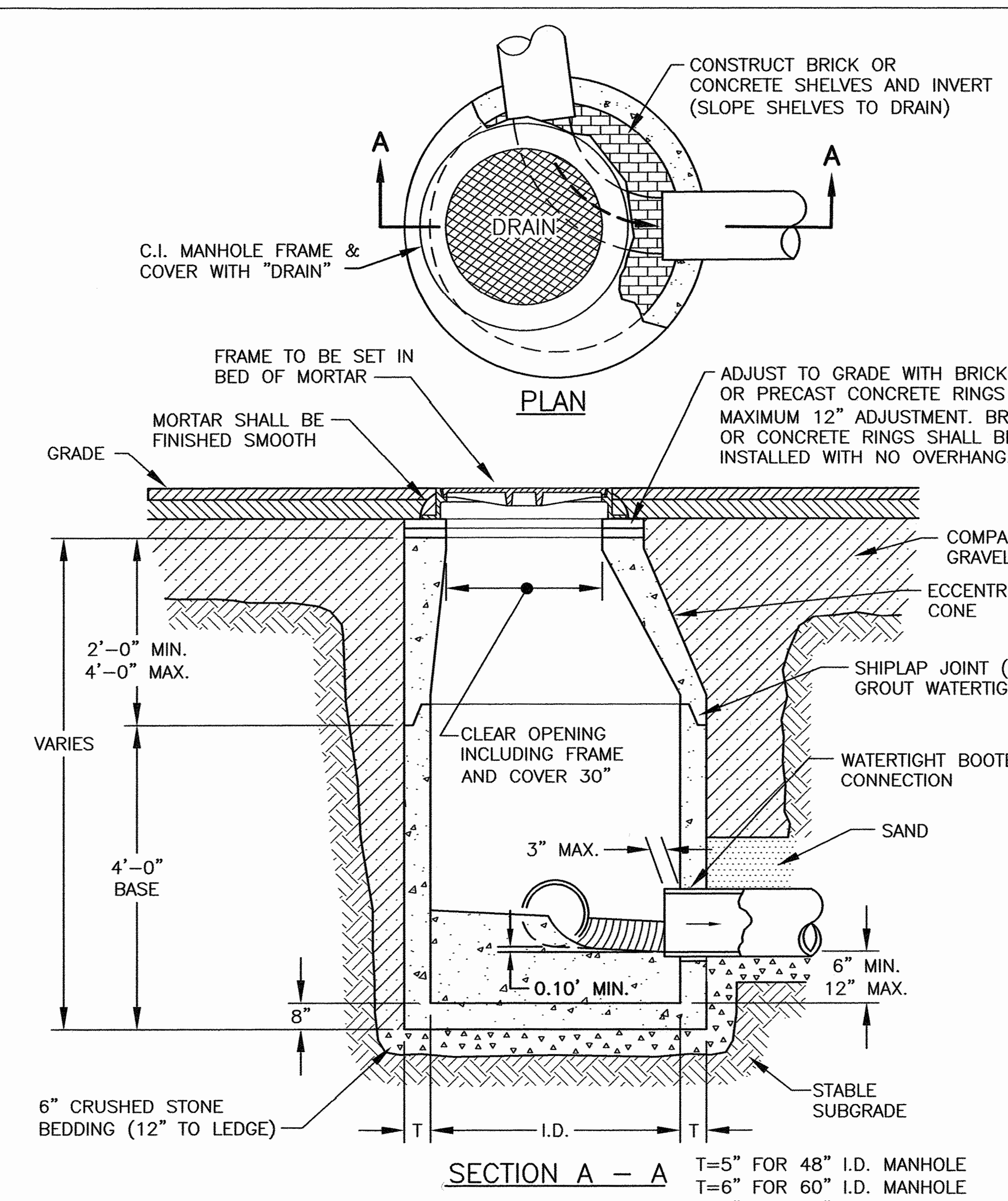
NOTES
1. SEE SHEET "REQUIREMENTS FOR PAD MOUNTED TRANSFORMER SLAB DETAILS", EVERSOURCE SPECIFICATIONS.
2. SEE DTR 56.223 FOR GROUNDING GRID.
3. 1" PVC CONDUIT SLEEVE FOR GROUND GRID LEADS.
4. ALL REBAR TO BE #6.
5. CONDUITS CUT 4" ABOVE SLAB BASE.

O / C4 TRANSFORMER FOUNDATION SINGLE PHASE
EVERSOURCE
NTS



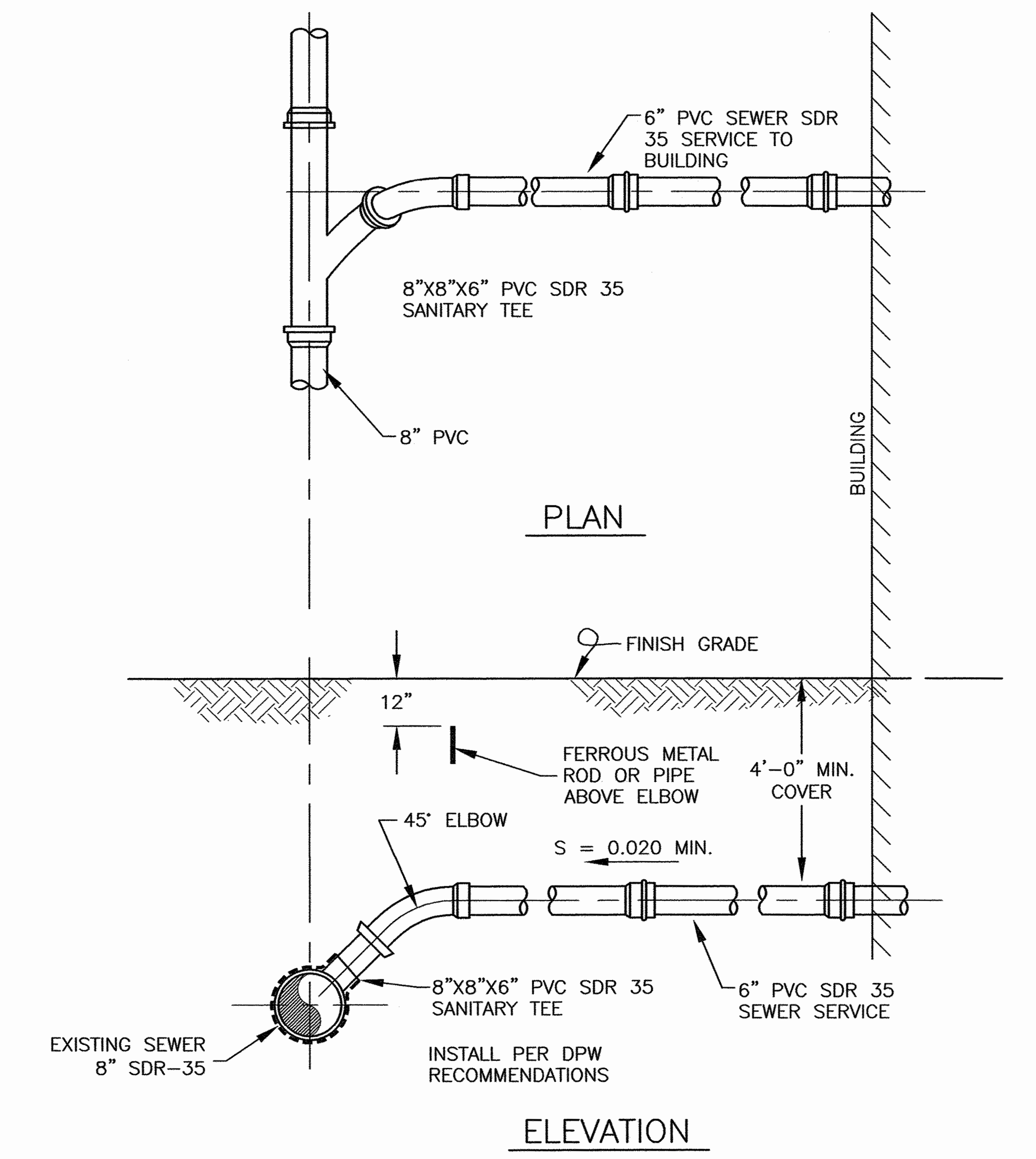
NOTES:
1. HYDRANTS SHALL BE INSTALLED A MAXIMUM DISTANCE OF 3 FEET CURB LINE TO OPERATING NUT.
2. THE PUMPER OUTLET NOZZLE SHALL FACE THE STREET.
3. CENTERLINE OF NOZZLES SHALL BE A MINIMUM OF 2 FEET ABOVE FINISHED GRADE OF STREET.
4. AREA AROUND HYDRANT SHALL BE GRADED TO ALLOW ANY SURFACE WATER TO DRAIN AWAY FROM HYDRANT.
5. HYDRANT SHALL BE FIRMLY SUPPORTED ALL AROUND THE STANDPIPE.
6. EARTH FILL SHALL BE TAMPED TO GIVE FIRM SUPPORT TO THE HYDRANT BARREL.
7. A GATE VALVE SHALL BE INSTALLED BETWEEN THE HYDRANT AND THE MAIN ON THE LATERAL.
8. HYDRANT LATERALS SHALL BE 6" INSIDE DIAMETER (MINIMUM).
9. HYDRANT LATERALS SHALL BE CONNECTED TO WATER MAINS 8 INCHES IN DIAMETER OR LARGER.
10. ALL JOINTS AT HYDRANT CONNECTION SHALL BE RESTRAINED MECHANICAL JOINTS.
11. INSTALLATION OF HYDRANTS IN AREAS OF HEAVY VEGETATIVE GROWTH SHALL HAVE A 10 FOOT RADIUS CLEAR AREA ALL AROUND THE OPERATING NUT OF THE HYDRANT.
12. THERE SHALL ALSO BE AN INDICATOR POST FABRICATED FROM 2 INCH INSIDE DIAMETER GALVANIZED STEEL PIPE, 7 FEET ABOVE FINISHED GRADE, AND SET 2 FEET BELOW GRADE IN CLASS "A" CONCRETE CONCRETE 6 INCHES ALL AROUND POST. THIS POST SHALL BE COATED WITH ZINC CHROMATE PRIMER AND PAINTED WITH HIGH VISIBILITY RED. THE INDICATOR POST SHALL BE NO CLOSER THAN 3 FEET FROM THE OPERATING NUT, AND SET ON THE SIDE OF THE HYDRANT FACING ONCOMING TRAFFIC. TOP OF POST SHALL BE THREADED AND CAPPED.
13. INSTALLATION OF HYDRANTS IN HEAVY GROWTH AREAS SHALL HAVE GATE BOXES RAISED 6 INCHES ABOVE GRADE AND SHALL BE PAINTED ORANGE FOR HIGH VISIBILITY.

P / C4 FIRE HYDRANT INSTALLATION DETAIL
CITY OF PORTSMOUTH STANDARDS AS SPECIFIED BY DPW
NTS

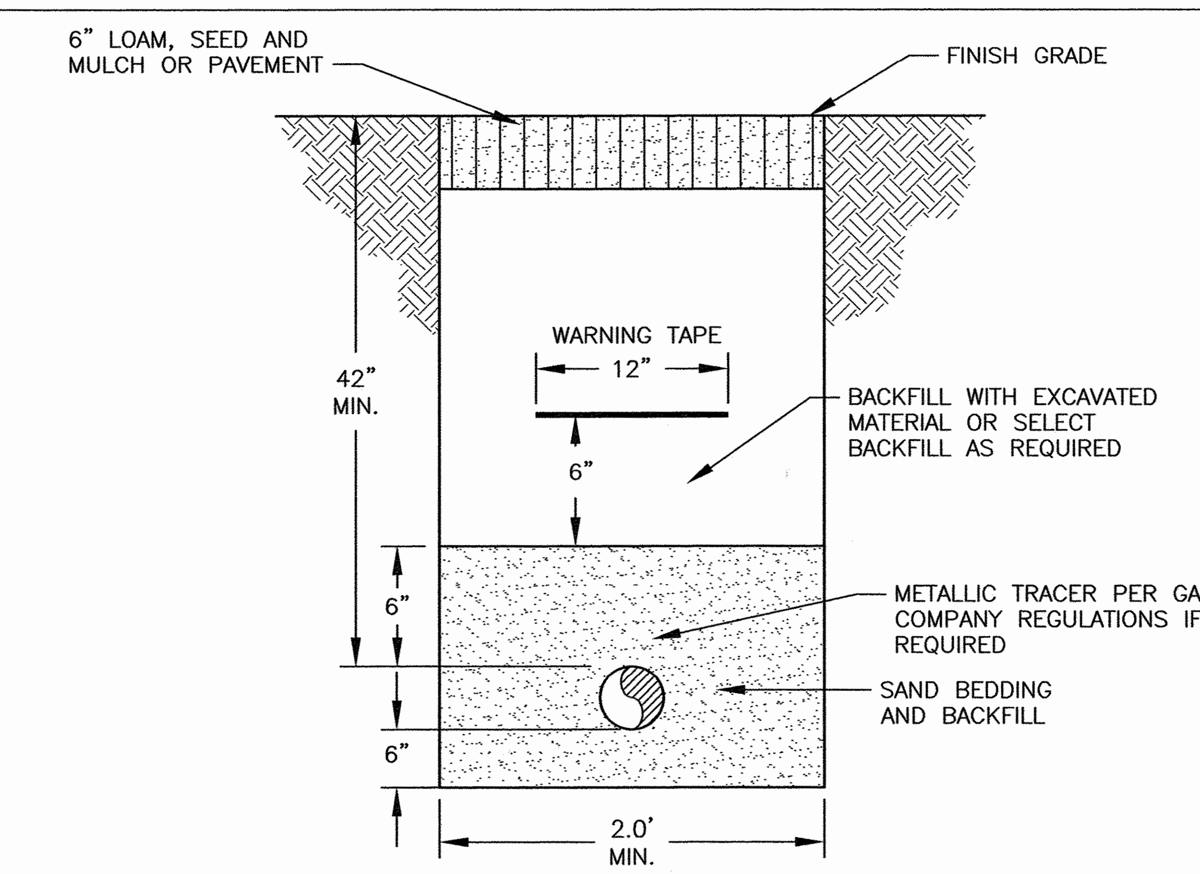


NOTES:
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FOOT.
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
5. ALL MANHOLES SHALL BE 48" I.D. UNLESS SPECIFIED OTHERWISE ON THE PLANS.
6. MANHOLE SHALL BE DESIGNED AND CONSTRUCTED TO WITHSTAND H-20 LOADING.

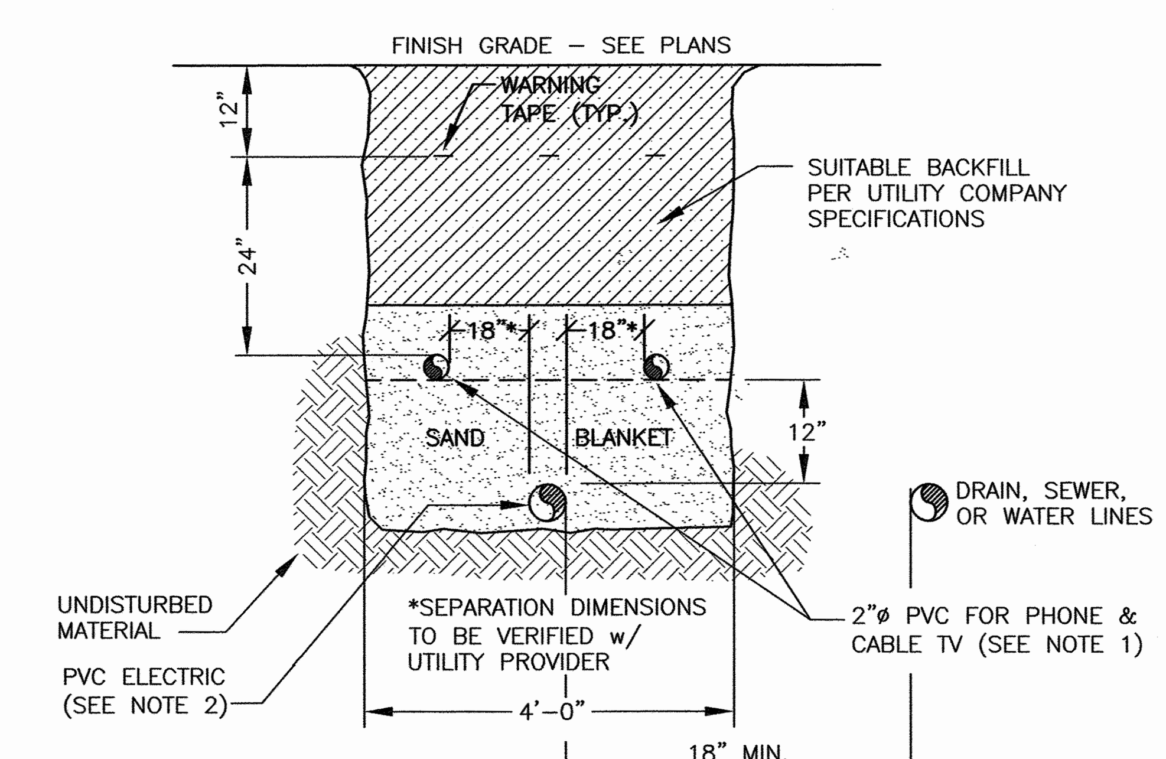
Q / C4 DRAIN MANHOLE DETAIL
NTS



R / C4 TYPE "A" SEWER SERVICE CONNECTION
NTS



S / C4 GAS SERVICE TRENCH
NTS



NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 40 FOR THE REMAINDER.
2) NORMAL CONDUIT SIZES FOR PSNH ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)
4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.

T / C4 UTILITY TRENCH
ELECTRIC/PHONE/CABLE
NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:
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3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) ALL WATER LINE INSTALLATION WORK SHALL BE TO CITY OF PORTSMOUTH WATER DEPARTMENT STANDARDS. DETAILS MAY OR MAY NOT BE UP-TO-DATE.

RESIDENTIAL DEVELOPMENT
CHINBURG DEVELOPMENT
686 MAPLEWOOD AVE.
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	10/3/23

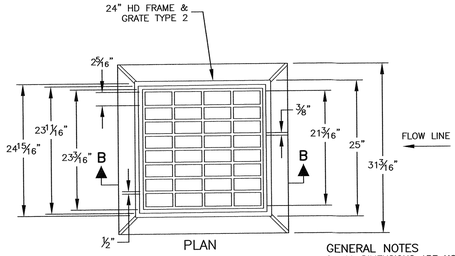
REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7551 LICENSED PROFESSIONAL ENGINEER

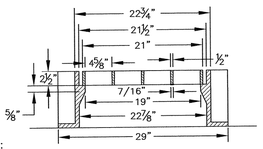
SCALE AS NOTED
OCTOBER 2023

DETAILS
D3

2360



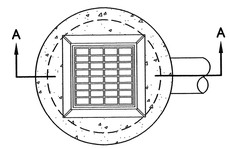
PLAN



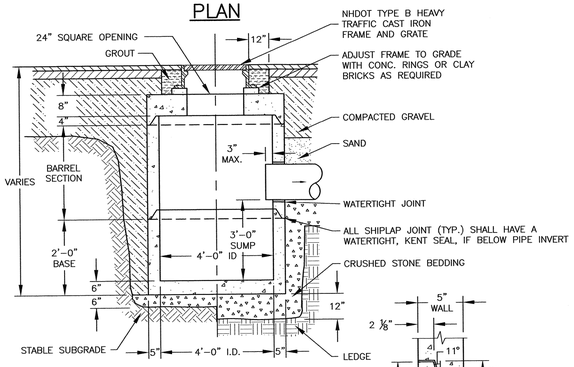
SECTION B–B

REFERENCE:
NHDOT STANDARD PLAN DR-1
PLATE 2 UPDATED 2015

GENERAL NOTES
1. ALL DIMENSIONS ARE NOMINAL.
2. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAME ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   C. ALL OTHER PERTINENT REQUIREMENTS ARE MET.
3. FRAME AVAILABLE IN 4" OR 8" HEIGHTS.
4. FREE OPEN AREA =2.55 SF
5. USE 3-FLANGE FRAME IS INSTALLED ADJACENT TO GRANITE CURB.

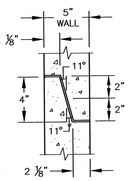


PLAN



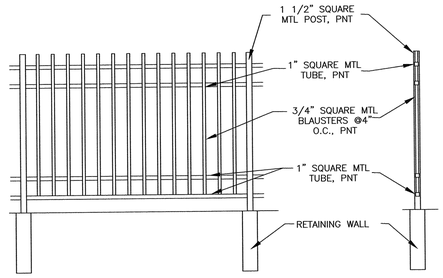
SECTION A – A

NOTES:
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.



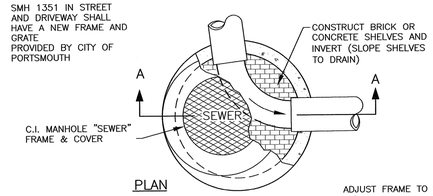
DETAIL OF SHIPLAP JOINT

U C3 NHDOT GRATE TYPE B & CATCH BASIN
EJPRESCOTT, INC. NTS

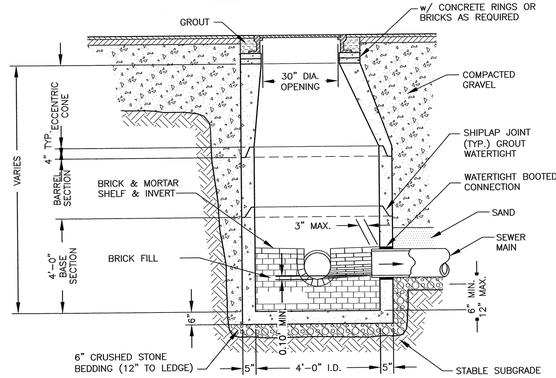


V C2 METAL FENCE DETAILS
TOP OF RETAINING WALL NTS

SMH 1351 IN STREET AND DRIVEWAY SHALL HAVE A NEW FRAME AND GRATE PROVIDED BY CITY OF PORTSMOUTH



PLAN

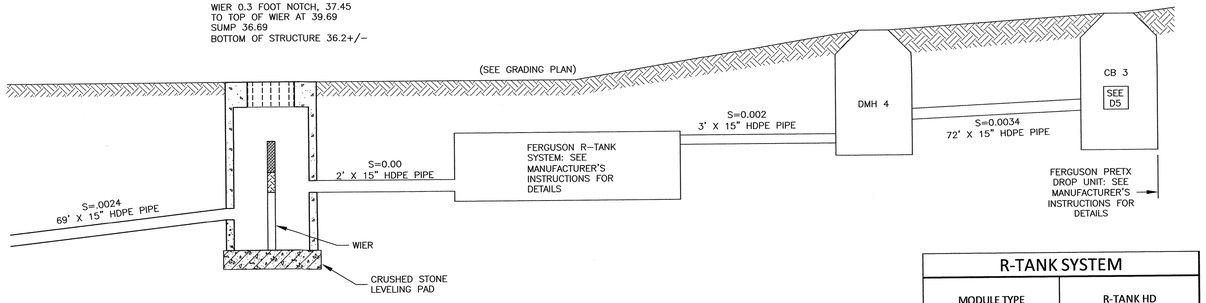


SECTION A – A

NOTES:
1) CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
2) CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3) THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FOOT.
4) EACH PRECAST SECTION TO HAVE LIFTING HOLES CAST IN.
5) SEWER MANHOLE SHALL CONFORM TO NHDES AND CITY OF PORTSMOUTH STANDARDS.

W C4 SEWER MANHOLE
NTS

DMH 3
OUTLET
CONTROL STRUCTURE
RIM =44.0
INV. IN = 37.45
INV. OUT =37.45
WIER 0.3 FOOT NOTCH, 37.45
TO TOP OF WIER AT 39.69
SUMP 36.69
BOTTOM OF STRUCTURE 36.2+/–



R-TANK SYSTEM	
MODULE TYPE	R-TANK HD
TRAFFIC LOAD	PEDESTRIAN
# OF TANKS	680
TANK UNIT DIMENSIONS	2H X 17W X 20 L
TANK STORAGE	2805.6 cf
STONE STORAGE	1000.4 cf
TOTAL STORAGE	3805.9 cf
TOP OF COVER STONE	41.27
TOP OF R-TANK	40.27
BOTTOM OF TANK	37.45
STONE BASE INVERT	37.20

X C4 R–TANK SYSTEM
NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

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RESIDENTIAL DEVELOPMENT
CHINBURG DEVELOPMENT
686 MAPLEWOOD AVE.
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	10/23/23
0	ISSUED FOR COMMENT	10/3/23

REVISIONS

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 19651
LICENSED PROFESSIONAL ENGINEER

AS NOTED — OCTOBER 2023

DETAILS — **D4**

2360

PRETX SPECIFICATIONS

A. GENERAL

1. PRETX SYSTEMS ARE A PRE-FILTER AND CRITICAL MAINTENANCE DEVICE THAT EXTENDS THE OPERATING LIFE AND REDUCES THE MAINTENANCE BURDEN OF BIORETENTION SYSTEMS, RAIN GARDENS, BIOSWALES AND OTHER TYPES OF SURFACE BEST MANAGEMENT PRACTICES BY FILTERING OUT SEDIMENT, TRASH AND DEBRIS AT THE INLET.

B. PRODUCTS

1. PRETX IS AVAILABLE IN 3 MODELS THAT MANAGE MOST BIORETENTIOIN INLET CONFIGURATIONS: CURB, DROP, AND INLINE.
2. PRETX-CURB IS FOR EDGE OF PAVEMENT RUNOFF AT A CURB CUT IN LIEU OF A STONE SPREADER.
3. PRETX-DROP IS FOR USE AS A DROP INLET CONFIGURATION ALONG A CURB LINE AND WOULD BE INSTALLED WITH A STANDARD DROP INLET GRATE.
4. PRETX-INLINE IS FOR USE WITH SUBSURFACE INLET AND OUTLET PIPE.
5. PRETX IS SIZED TO PRETREAT WATER QUALITY FLOWS AND BYPASS LARGER FLOWS THAT HAVE MINIMAL TRASH AND DEBRIS. PRETX CAN BE USED BOTH IN RETROFIT OR NEW INSTALLATIONS.
6. ACCEPTABLE SYSTEM SUPPLIER:
   CONVERGENT WATER TECHNOLOGIES, INC. OR ITS AUTHORIZED VALUE-ADDED RESELLER
   (800) 711-5428
   WWW.CONVERGENTWATER.COM

C. SUBMITTALS

1. SUBMIT PROPOSED LAYOUT DRAWINGS. DRAWINGS SHALL INCLUDE TYPICAL SECTION DETAILS ANNOTED WITH SYSTEM ELEVATIONS (E.G., RIM, PIPE INVERTS, OUTSIDE BOTTOM OF STRUCTURE, ETC.).
2. SUBMIT MATERIAL CERTIFICATES FOR FRAMES AND COVERS
3. ANY PROPOSED EQUAL ALTERNATE PRODUCT SUBSTITUION TO THIS SPECIFICATON MUST BE SUBMITTED FOR REVIEW AND APPROVED PRIOR TO BID OPENING.

D. EXECUTION

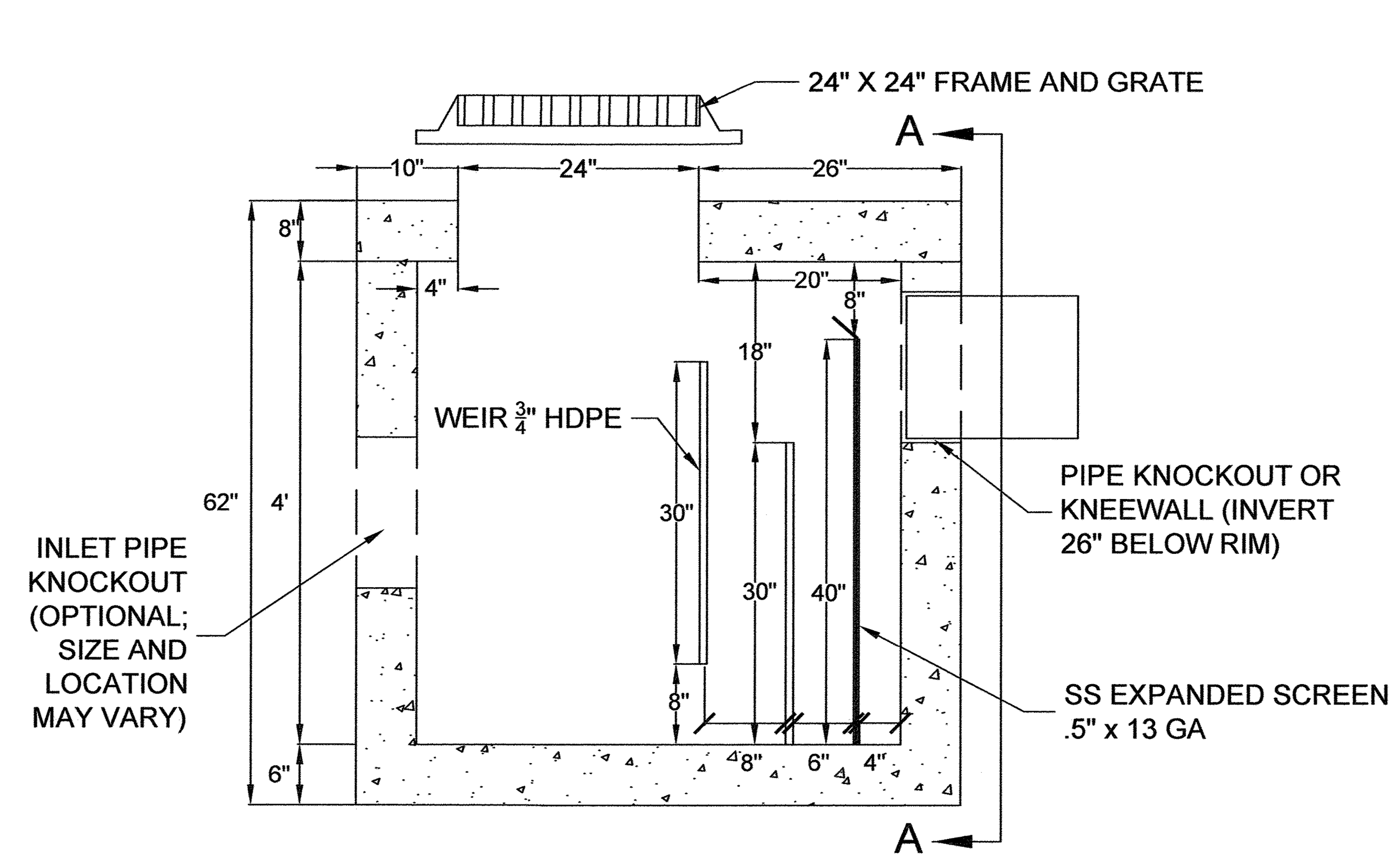
1. All PUBLIC STORM DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS AND ACCORDING TO LOCAL MUNICIPAL REQ UIREME NTS.
2. All STORM DRAINAGE SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE PROJECT ENGINEER.
3. THE CONTRACTOR SHALL NOTIFYTHE PROJECT ENGINEER A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTIO N.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND OBTAINING APPROVAL FROM DIG-SAFE AND DETERMINING THE LOCATION OF All UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION/ EXCAVATI ON AND SHALL NOTIFY THE PROJECT ENGINEER OF ANY POTENTIAL CONFLICTS.
5. TO PROTECT STORMWATER FLOW CONTROL AND QUALITY TREATMENT FACILITIES FROM SEDIMENTATION, THEY SHALL BE CONNECTED TO THE STORM CONVEYANCE SYSTEM ONLY AFTER ALL SITE WORK, ROAD CONSTRUCTION, UTILITY WORK AND LANDSCAPING ARE IN PLACE IN ALL AREAS ABOVE AND UPSTREAM OF THE FACILITY.
6. THE EXISTING STORM SEWER SYSTEM SHALL STAY ISOLATED FROM THE NEW SYSTEM UNTIL THE NEW SYSTEM IS CLEANED, AND APPROVED FOR USE. THERE SHALL BE NO DEBRIS IN THE LINES OR FURTHER CLEANING Will BE REQUIRED PRIOR TO ACCEPTANCE.
7. PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR
8. THE OPENING SHALL BE MEASURED ATTHE TOP OF THE PRECAST BASE SECTION.
9. All PICKUP HOLES SHALL BE GROUTED FULL AFTER THE BASIN HAS BEEN PLACED.
10. STANDARD CURB INLETS AND TIPDOWNS SHALL BE PRECAST CONCRETE OR ASPHALT.
11. PIPE ENDS SHALL BE FLUSH WITH THE INNER WALL OR 1" MAXIMUM INTRUSION. MASONRY, CINDER BLOCKS, OR SIMILIAR MATERIALS MA Y BE USED TO ADJUST THE RISERS TO GRADE PRIOR TO GROUTING.
12. GROUTING SHALL BE SUFFICIENTTO PREVENT LEAKS BETWEEN THE PRECAST COMPONENTS OF THE COMPLETED STRUCTURE & SHALL BE PERFORMED INSIDE, BETWEEN & OUTSIDE OF All RISERS, JOINTS & PIPE PENETRATIONS.
13. MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M-199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
14. All REINFORCED CAST IN PLACE CONCRETE SHALL BE CLASS 4000. All PRECAST CONCRETE SHALL BE CLASS 4000.
15. RECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
16. MATING SURFACES OF MANHOLE RINGS AND COVERSSHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITIONS.

E. CONSTRUCTION AND SEQUENCING

1. EXAMINATION
   A. VERIFY LAYOUT AND ORIENTATION OF PRE-TX SYSTEM AREA INCLUDING EDGE OF PAVEMENT, TIP DOWN, CURBS AND SIDEWALK, BIOFILTRATION SYSTEM, AND CONNECTIONS.
   B. VERIFY EXCAVATION BASE IS READY TO RECEIVE WORK AND EXCAVATIONS, DIMENSIONS, AND ELEVATIONS ARE AS INDICATED ON DRAWINGS.
2. PREPARATION
   A. CALL DIG SAFE AND RECEIVE APPROVAL BEFORE PERFORMING WORK.
   B. REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND SURROUNDING CONSTRUCTION AREAS.
   C. IDENTIFY REQUIRED LINES, LEVELS, CONTOURS, AND DATUM.
   D. CLEAR AND GRUB THE PROPOSED PRE-TX SYSTEM AREA.
3. EXCAVATION AND INSTALLATION
   A. THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, AND ENGINEERS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
   B. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORM WATER AWAY FROM THE PRE-TX SYSTEM AREA.
   C. EXCAVATE TO THE BOTTOM INVERT OF THE SYSTEM.
   D. TO MINIMIZE COMPACTION OF ADJACENT BIOFILTRATION SYSTEMS, WORK EXCAVATORS OR BACKHOES FROM THE SIDES TO EXCAVATE THE PRE-TX SYSTEM AREA TO ITS APPROPRIATE DESIGN DEPTH AND DIMENSIONS.
   E. ROUGH GRADE THE PRE-TX SYSTEM AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE PRE-TX SYSTEM FACILITIES TO WITHIN 1 FOOT OF STRUCTURE BOTTOM .
   F. PLACE 1 FOOT BED OF COARSE STONE TO ELEVATION OF BASE OF STRUCTURE.
   G. ESTABLISH ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT AND TIP DOWN, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED ON DRAWINGS.
4. INSTALLATION
   A. PLACE THE PRECAST SYSTEM TO NECESSARY ELEVATION.
   B. VERIFY ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT, PAVEMENT GRADING FOR INLET GRATE FOR PRETX-DROP, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS, OUTLET INVERT FOR KNEE WALL.
   C. FOR PRETX-SURFACE:
      a. VERIFY ELEVATIONS FOR ADJACENT CURBS.
      b. VERIFY EDGE OF PAVEMENT TIP DOWN PAVEMENT GRADING FOR INLET GRATE.
      c. VERIFY CURB ELEVATION IN RELATION TO PAVEMENT AND TIP DOWN.
      d. VERIFY OUTLET INVERT FOR KNEE WALL IN RELATION TO FILTER MEDIA.
   D. FOR PRETX-DROP:
      a. VERIFY ALL INLET PIPES ENTER THE STRUCTURE UPSTREAM OF BAFFLE.
      b. VERIFY FRAME AND GRATE OFFSET ON INLET SIDE AND UPSTREAM OF BAFFLE.
      c. VERIFY CURB LOCATION WITH RESPECT TO FRAME AND GRATE ORIENTATION.
   E. INSTALL BAFFLES, WEIR, AND SCREENS AS INDICATED ON DRAWINGS.
   F. VERIFY MAINTENANCE ACCESS THROUGH GRATE OR COVER AND CLEARANCE FOR VACTOR.
   G. INSTALL TOP OF STRUCTURE LEVEL WITH ADJACENT CURB OR SIDEWALK AS PER MANUFACTURERS SPECIFICATIONS. ENGINEER FIELD VISIT REQUIRED PRIOR TO BACKFILLING.
5. BACKFILLING
   A. BACKFILL WITH APPROVED SOIL AND STONE TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
   B. BACKFILL WITH 12" OF NO. 57 STONE AROUND REAR, LEFT, AND RIGHT SIDES TO LEVEL WITH TOP OF HDPE SCREEN.
   C. BACKFILL WITH BIORETENTION SOIL MIX BEYOND STONE BACKFILL TO EQUAL ELEVATION OF THE TOP OF HDPE SCREEN.
   D. DO NOT BACKFILL SOIL OR STONE AGAINST STAINLESS SCREEN.
   E. DO NOT COMPACT ADJACENT FILTRATION SYSTEM SOIL WITH MECHANICAL EQUIPMENT.
   F. STABILIZE All REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/ ORerosion CONTROL BLANKETS AS INDICATED ON DRAWINGS.
6. CLEAN UP
   A. AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIA LS, RUBBISH, EXCESS SOIL, ETC., FROM THE PROJECT SITE. REPAIR PROMPTL Y ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.

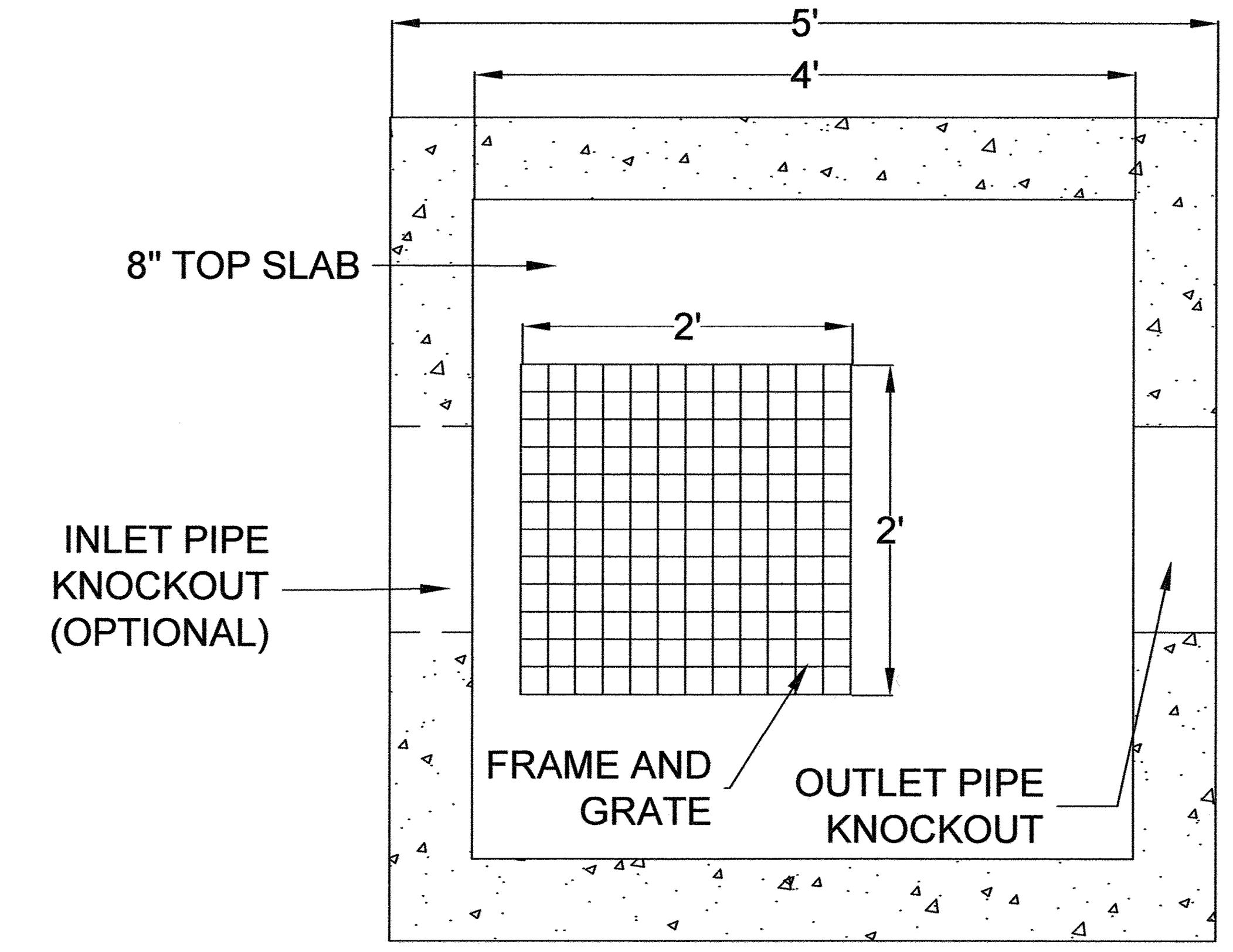
PRETX–DROP ELEVATION GUIDE

POINT	DESCRIPTION	HEIGHT IN REFERENCE TO PT. A
A	OUTSIDE OF TOP SLAB	0"
B	EDGE OF PAVEMENT	5", MIN.
C	PIPE INVERT	25.5" FOR 12" PIPE, 21" FOR 8" PIPE, 19" FOR 6" PIPE
D	SUMP INVERT	56"
E	OUTSIDE BOTTOM	62"
F	OPTIONAL INLET PIPE KNOCKOUT	VARIES



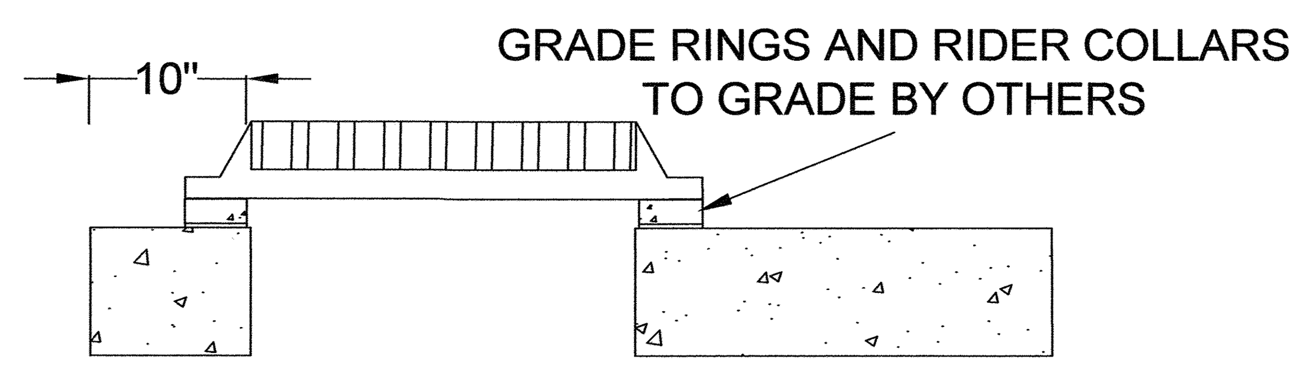
PRETREATMENT CATCH BASIN CROSS SECTION VIEW

NOT TO SCALE



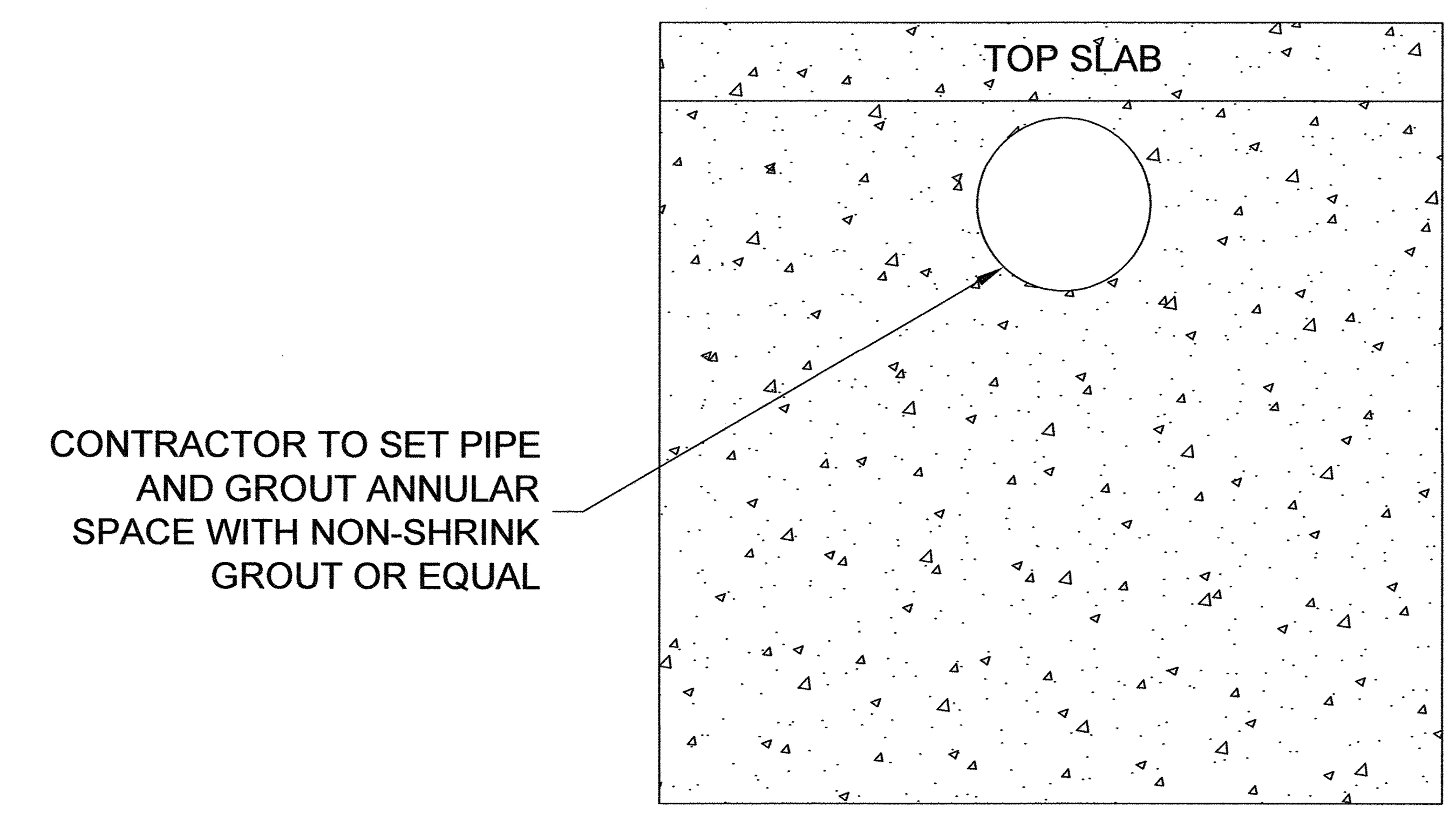
PLAN VIEW DETAIL

NOT TO SCALE



PRETX DROP SIDE DETAIL

NOT TO SCALE



SECTION A-A

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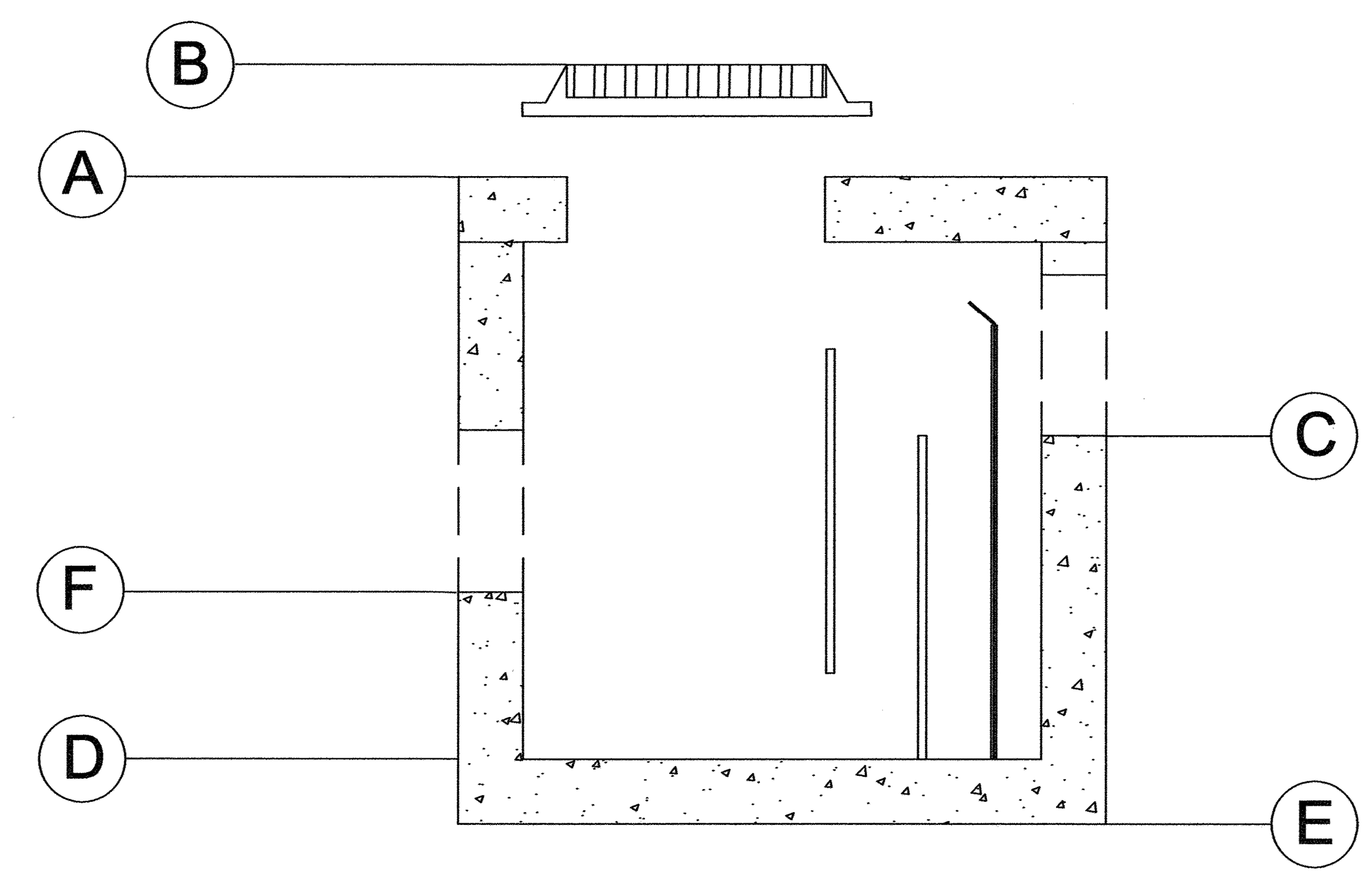

KEY TO ELEVATION GUIDE

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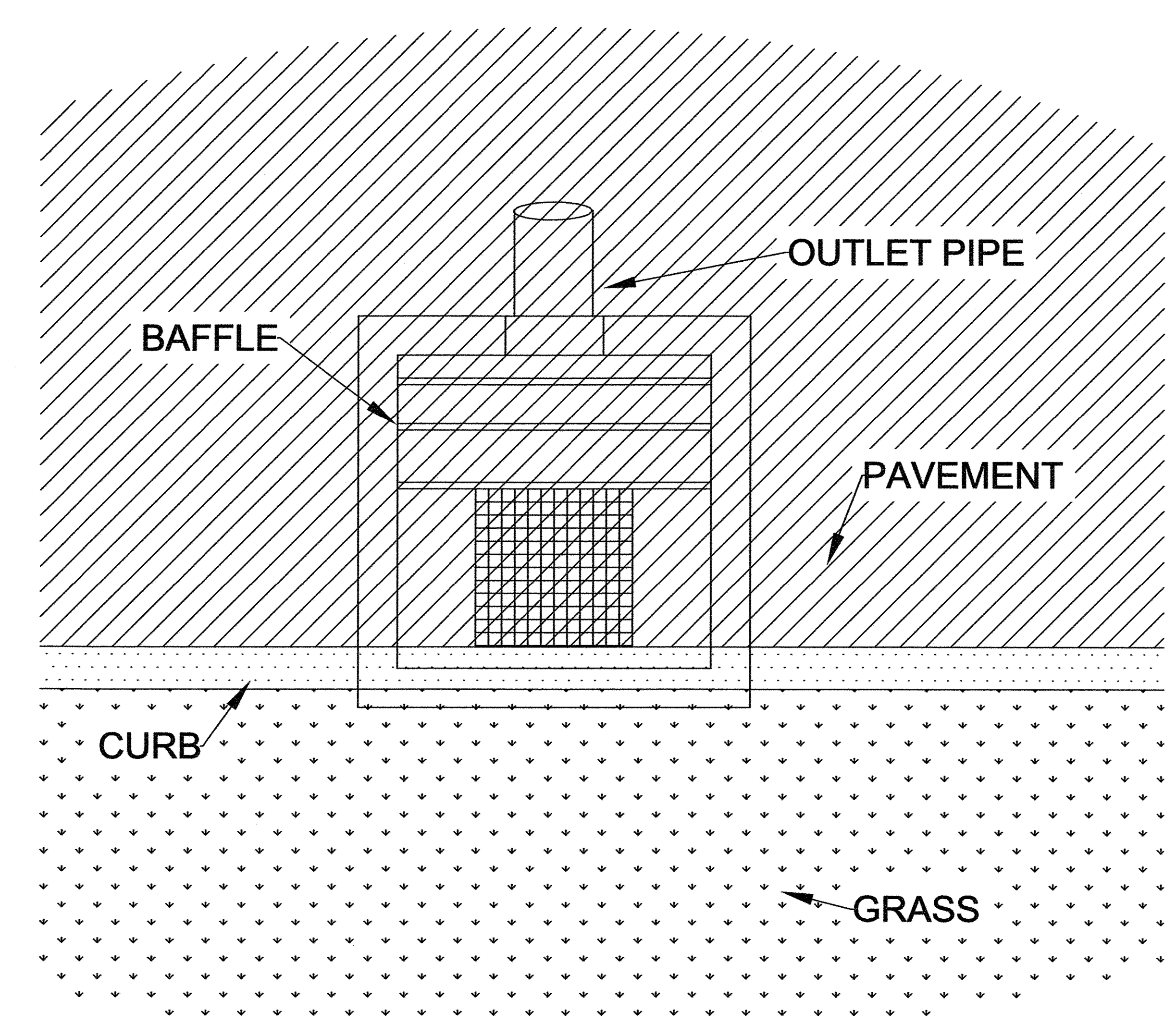

PRETX DROP OUTLET CONFIGURATION

NOT TO SCALE

Y / C4 PRETX–DROP INLET NTS

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